

A MANUAL
OF
EUROPEAN BUTTERFLIES.

RB62061



Library
of the
University of Toronto

F. Jourdain

5/9/82

Oxford.

6/-

1



2



3



4



7



5



10



12



8



J.W. Wood. del

ANDERSON

EUROPEAN



9



11



11

BUTTERFLIES



Stainton

A MANUAL
OF
EUROPEAN BUTTERFLIES,

ON THE PLAN OF

STANTON'S MANUAL OF BRITISH BUTTERFLIES
AND MOTHS.

By W. F. KIRBY.

THE ILLUSTRATIONS BY T. W. WOOD.



1862.

WILLIAMS AND NORGATE,
14, HENRIETTA-STREET, COVENT-GARDEN, LONDON ;
AND
20, SOUTH FREDERICK-STREET, EDINBURGH.

LONDON :
PRINTED BY A. PEARCE, 39, GRAFTON-ROAD,
KENTISH-TOWN, N.W.

TO

H. T. STAINTON, ESQ., F.L.S., F.G.S.,

AUTHOR OF

“A MANUAL OF BRITISH BUTTERFLIES AND MOTHS,”

THIS LITTLE WORK

IS DEDICATED,

AS A SLIGHT TRIBUTE

OF RESPECT AND GRATITUDE,

BY THE AUTHOR.

P R E F A C E.

HITHERTO British Lepidoptera have engrossed more than their fair share of attention. The difference in the manner of setting insects, and the inconvenience of exchanging them on the Continent, and more especially the want of any English book on the subject, has doubtless operated in producing such a result. I am not aware of a single work in the English language devoted exclusively to any portion of the Macro-Lepidoptera of Europe generally. Several works on European Lepidoptera have been published on the Continent; but those which I have seen have almost all been either costly illustrated works, local faunas, or books more or less out of date. A Manual of European Butterflies, on the principle of Mr. Stainton's excellent "Manual of British Butterflies and Moths," is much wanted as a beginning by Entomologists who are anxious to penetrate the Egyptian darkness that conceals the Lepidoptera of Europe from the eyes of British collectors. Finding myself in London, within reach of all the principal collections, and with unusual facilities for studying the literature of Entomology, I resolved to make an attempt to supply this want. I have received invaluable assistance from several of our

first entomologists, who have allowed me to make the freest use of their collections and libraries. I therefore take this opportunity of thanking Mr. Stainton, Mr. Hewitson, Mr. Hind, Mr. Doubleday, and Professor Westwood, for the kindness they have shown me during the progress of my work; and must not forget to mention that during the time I was engaged in investigating the British Museum collection, I received the utmost attention and courtesy from every one with whom I came in contact. All the descriptions of perfect insects are made from specimens, except in the case of such species as I have not seen. When these are described from Herrich Schäffer, his figures are generally intended. The families, sub-families, and genera, are characterised from Boisduval, Westwood, Stainton, and other authorities. I could not well refer to these in the body of the work, as two or more have generally been collated in each case. The descriptions of larvæ are in most instances greatly abridged, and therefore the authorities from whom these are taken are not responsible for any incompleteness in this portion of my manual. The tables of species of *Papilionidæ* are mostly original: those of the first four sub-families of *Nymphalidæ* are adapted from Fischer de Waldheim, and almost the whole of the remaining tables from Herrich Schäffer. The plan of the first Appendix is taken partly from Gosse's "Actinologia Brittanica," and partly from some suggestions made to me by Mr. A. G. More. I have tried to make my book as practically useful as possible; and, with this view, have given copious

indices, and figures of most of the genera not occurring in Great Britain. But some of the Continental forms of well-known genera (*Hipparchia* for example) are as unlike any British species as if they belonged to quite a different genus. The arrangement I have followed, with a few modifications, is that used by Doubleday and Westwood in the "Genera of Diurnal Lepidoptera"—not as the best, for that recently proposed by Mr. H. W. Bates, in the "Proceedings of the Linnean Society," is probably the most natural—but as that employed in the most comprehensive work yet published on the Rhopalocera of the world. I should have had great difficulty in deciding what constituted a species in the more difficult genera (for it is not always an easy matter to determine, even in the case of butterflies), had I not resolved to follow Staudinger's recent catalogue for the limits of species and varieties, which has been done in almost every case. I have had some trouble in deciding which of the Russian and Turkish species to admit, for many writers use these terms very loosely, owing to all Siberian, Syrian, and North African species being considered European. I have, I believe, included all the really European species, and very probably by mistake one or two Asiatic ones. Having access to all the most important Continental Entomological periodicals as soon as they are published, I have been enabled to bring my information down to the latest date, and have even given descriptions of some new species described by Staudinger in the "Stettiner Entomologische Zeitung" for the present year.

In conclusion, I leave my Manual in the hands of British Entomologists, persuaded that, whatever errors I have committed, those who are most likely to detect them will also be most lenient towards me, being themselves most able to appreciate the labour of writing a work of this nature, and the impossibility of always avoiding mistakes.

W. F. KIRBY.

London, Dec. 1, 1862.

CONTENTS.

	Page
PAPILIONIDÆ	2
DANAIDÆ	20
NYMPHALIDÆ	20
LIBYTHEIDÆ	82
ERYCINIDÆ	83
LYCÆNIDÆ	83
HESPERIIDÆ	113
Appendix I.—GEOGRAPHICAL DISTRIBUTION . . .	125
Appendix II.—SYNONYMIC INDEX	133
Appendix III.—LIST OF AUTHORITIES, &c. . . .	141
INDEX	147

EXPLANATION OF PLATES.

Fig. 1.	THAIS POLYXENA	Page 6
Fig. 2.	PARNASSIUS DELIUS	7
Fig. 3.	DANAIS CHRYSIPPUS	20
Fig. 4.	ARASCHNIA PRORSA	37
Fig. 5.	NEPTIS ACERIS	42
Fig. 6.	CHARAXES JASIUS (under side)	44
Fig. 7.	CÆNONYMPHA MANDANE (upper and under sides)	66
Fig. 8.	CHIONOBAS AELLO	71
Fig. 9.	LIBYTHEA CELTIS	82
Fig. 10.	THESTOR BALLUS	88
Fig. 11.	CHRY SOPHANUS HYPOXANTHE (upper and under sides)	91
Fig. 12.	CYCLOPIDES STEROPES (under side)	124

EXPLANATIONS AND ABBREVIATIONS.

SIZE.

" indicates inches ; "' indicates lines, or twelfths of an inch. For example, 1" 4"'—1" 7"' means that the insect in question varies from 1 inch 4 lines to 1 inch 7 lines.

SEXES.

♂ stands for male ; ♀ female.

WINGS.

F.-w. fore wing ; h.-w. hind wing ; u. s. under side.

The upper side of an insect is always described when the u. s. is not mentioned ; and the description of the u. s. applies in almost every case (the exceptions being carefully indicated) to both sexes.

TIMES OF APPEARANCE.

These are indicated by the Roman numerals I. to XII. placed after the description of each species, which stand for the twelve months of the year.

TECHNICAL TERMS.

OUTLINE OF WING.

Costa. The front edge of each wing.

Base. The portion of the wing nearest the body.

Hind margin. The edge furthest from the body.

Inner margin. The edge opposite the costa.

Tip. The part where the costa meets the hind margin.

Anal angle. Where the hind margin meets the inner margin.

When the markings of an insect are spoken of as above or below comparatively, the reference must be understood to mean that they

are nearer the head (above) or further from it (below). When a mark is said to be within or without another, it is meant that it is nearer the base (within) or nearer the hind margin (without).

VARIOUS TERMS.

Bipupilled eye, *vide* eye.

Disc. cell } Between the base and the centre of the wing of a
Disc. spot } butterfly is a space called the discoidal cell, which is
Disc. lunule } more or less completely surrounded with nervures.

At the extremity of this is often a spot or lunule (disc. spot). When more than one is mentioned, they must be understood to be spots placed in this space.

Dorsal streak or line. A mark running down the middle of the back of most larvæ from the head to the tail.

Eye. A spot surrounded with a ring of a different colour (a blind eye), or with one or two (a bipupilled eye) dots (or pupils) in the centre.

Lateral streaks. Most larvæ have lines of a different colour running along each side from the head to the tail. When, for example, a larva is described as having two lateral lines, it must be understood to have two on each side.

Marginal. A streak or other marking nearer the hind margin than any other mark. When the margins are spoken of collectively, the whole of the boundaries of the wing or wings are indicated.

Ocellated. An eye with a pupil.

Pupil, *vide* Eye.

Simple spot. A spot which is generally represented by an eye (or ocellated spot) in allied species.

Italics in the descriptions are only used to point out the distinguishing characters of species not sufficiently separated in the analytical tables.

The abbreviations of the names of authorities are given in Appendix III., p. 141.

* indicates that the species is contained in the British Museum collection ; †, that I have not seen a specimen.

A Manual
OF
EUROPEAN BUTTERFLIES.

BETWEEN 300 and 400 species of RHOPALOCERA, or butterflies, are known to occur in Europe, though the number allotted to the British Isles is under seventy. The less explored countries of Europe, such as Greece and Lapland, are continually yielding new species; and the number of doubtful varieties (of which we know too little to venture to call them species at present) is very large.

Seven of the primary families of Rhopalocera occur in Europe, which may be tabulated thus:—

- A. Palpi four times as long as the head. 4. LIBYTHEIDÆ.
- AA. Palpi variable, but never, at least in European species, reaching to the length of those of the LIBYTHEIDÆ.
- B. Antennæ inserted close together.
- C. Front legs fitted for walking.
- D. Wings white or yellow. 1. PAPILIONIDÆ.
- DD. Wings blue, copper-red, or brown. 6. LYCÆNIDÆ.
- CC. Front legs rudimentary.

E. Inner margin of h.-w. not grooved. 2. DANAIDÆ.

EE. Inner margin of h.-w. grooved. 3. NYMPHALIDÆ.

BB. Antennæ inserted widely apart. 7. HESPERIIDÆ.

Family 5. ERYCINIDÆ is omitted, as the single European species (*Nemeobius Lucina*) is well known to every collector, and it would have been difficult to bring it into the table. It must be remembered that the tables apply only to *European* species, and that there are aberrant species even among these to which the tables of genera given will not always apply.

FAMILY I. PAPILIONIDÆ.

Imago with the front legs fully developed, club of the antennæ distinct, never hooked at the tip. Larva elongate, nearly cylindrical, and without long spines. Pupa attached by the tail, and a belt of silk round the middle of the body. The two sub-families are distinguishable thus:—

A. Inner margin of h.-w. concave. 1. PAPILIONIDES.

AA. Inner margin of h.-w. convex. 2. PIERIDES.

The larvæ of the *Papilionides* have a retractile fork on the second segment.

Sub-family I. PAPILIONIDES.

The four European genera are not difficult to recognise.

A. Hind wings tailed. 1. PAPILIO.

AA. Hind wings with no tail.

B. Hind wings dentated. 2. THAIS.

BB. Hind wings rounded.

C. Club of the antennæ curved. 3. DORITIS.

CC. Club of the antennæ straight. 4. PARNASSIUS.

Genus 1. PAPILIO.

Head large, palpi very short, antennæ rather long and thick, club curved, abdomen rather thick, of moderate length, wings rather thick, the hind ones in the European and the majority of the exotic species, with a long tail.

This genus is one of the most extensive; no less than 355 species are enumerated in the British Museum Catalogue of *Papilionidæ*, published in 1856, and many more have been discovered since. But the East Indies and America are the head quarters of the group, and only four species occur in Europe.

A. More than one black streak running quite across the centre of the f.-w. *P. Podalirius*.

AA. Only one black streak, &c. *P. Alexanor*.

AAA. None of the black streaks, &c. *P. Machaon* and *P. Hospiton*.

*P. PODALIRIUS. 2" 9"—3" 5". F.-w. pale straw colour, hind margins black. Several black streaks running from the costa, the alternate ones extending to the hind margin. H.-w. pale straw colour, the longer black streaks more or less continued. Hind margin broadly black, tail longer and narrower than in the other species. Four blue spots in the black border, and a black, blue, and orange eye, at the anal angle. IV—VIII.

Larva yellowish green dotted with red, with whitish yellow lines on the back and sides, and oblique streaks of the same colour. Turns yellow when full fed. (O). On almond, sloe, plum, apple, pear, and oak. VI. IX.

*P. ALEXANOR. 2" 8"—3". F.-w. yellow, base and hind margin black. Several black streaks run from the costa, but only the one nearest the base extends to the hind margin. H.-w. yellow, the hind margin broadly

black, dusted with blue; the long black band of the f.-w. is produced across the h.-w., joining the black inner margin towards the anal angle. Disc. cell closed by a very distinct oval, or rather crescent-shaped streak; a red, blue, and black eye, at the anal angle. V—VII.

Larva pale green, the incisions black, and having on each segment except the first, black spots interrupted with yellow. (V.G.) On *Seseli dioicus*, *S. montanum*, and other Alpine *Umbelliferae*. VII.

*P. MACHAON. 2" 11"—4" 2". F.-w. yellow, base black dusted with yellow, hind margin broadly black; three short black costal streaks. H.-w. yellow, inner margin black, disc. lunule narrower than in *Alexanor*, hind margin broadly black, dusted with blue, in such a manner as to form six *very large dull blue spots*, and having several yellow lunules on its outer part, and bounded inside by a *well-defined black line*. A large red, blue, and black eye, at the anal angle. V—VIII.

Larva green with velvety black incisions, and a transverse black band on each segment, marked with orange spots. (V.G.) On wild carrot and many other *Umbelliferae*. VI—IX.

P. HOSPITON. 2" 10". F.-w. similar to *Machaon*, but darker. H.-w. dusky at the base, then with a broad yellowish band; the whole outer part of the wing beyond the disc. lunule is black dusted with yellow, *not bounded internally by a distinct line*, with six *bright blue spots*, and a row of yellow marginal lunules; fringes yellow. Tail exceedingly short. The eye is reduced to a *red lunule between two black ones*, and is surmounted by a blue lunule. The blue markings are as distinct on the u. s., as above. V—VI.

Larva green, spotted with black, white, and red, and furnished with inconspicuous prickles (Bd). On *Ferula communis*.

Genus 2. THAIS.

Club of the antennæ curved; wings opaque, hind wings much dentated, palpi long and very hairy; body slender. Wings chequered with yellow, red and black. Larva furnished with fleshy tubercles, having stiff bristles at the extremity.

A. Hind wings irregularly dentated. *T. Cerisyi*.

AA. Hind wings regularly dentated.

B. A transparent spot near the tip of f.-w. *T. Rumina*.

BB. No transparent spot near the tip of f.-w. *T. Polyxena*.

*T. CERISYI. 2" 3'''—2" 5'''. F.-w. yellowish white, with a row of short black costal streaks; hind margin black, with two rows of more or less distinct black spots running parallel to it. Base of all the wings black. H.-w. resembling those of a *Papilio* in shape; yellowish white, a marginal row of black spots, and an inner row of red ones. I—II. VI.

Larva blackish grey with a bright yellow lateral stripe, and two similar dorsal ones; a short red spine on each segment, legs small and brown, prolegs short. (Freyer.) On *Aristolochia*. VIII.

*T. RUMINA. 1" 7'''—2" 6'''. F.-w. ochre yellow or yellowish white (var. *Medesicaste*); hind margin black. Six black costal bands coalescing into three about the centre of the wings; these three extend to the inner margin. There are also five red spots, and a transparent spot near the tip. H.-w. yellowish white, with a row of red marginal spots, and nearly always a red spot near the base; between these are a few black spots. Sometimes the red spots are so large as to cover nearly the whole of the h.-w. (var. *Honnoratii*). V—VI.

Larva dark grey or slightly reddish, the belly paler. Small black longitudinal streaks on the forepart of each segment (Bd). On *Aristolochia pistolochia*. III—IV.

*T. POLYXENA (fig. 1). 1" 11'''—2" 5'''. Much resembles *Rumina*, but has only one red spot on f.-w., and even this is sometimes wanting. The marginal row of the h.-w. is paler. The red basal spot of the h.-w. and the transparent apical one of the f.-w. are wanting. Sometimes the red spots are wholly absent. III—V.

Larva citron yellow with a brown dorsal band, six rows of reddish yellow spines streaked with black, and a lateral series of black dots arranged triangularly (Bd). On *Aristolochia clematidis*. VIII.

Genus 3. DORITIS.

Palpi rather short, antennæ curved, body rather thick and hairy; wings semi-transparent, hind wings not dentated, and having a marginal row of eye-like spots.

*D. APOLLINA. 1" 11'''—2" 3'''. F.-w. semi-transparent, whitish, dusted with dark grey, two large black spots near the centre of the costa, h.-w. yellowish, margined with a row of black eyes with blue pupils, and an inner row of red spots. II—III.

Larva cylindrical, clothed with short hairs, black with two rows of red spots on each side, between which, on the middle segments, are a series of six red spots. (Kindermann.) On *Aristolochia*. IV.

Genus 4. PARNASSIUS.

Palpi hairy, longer than in *Doritis*, antennæ short, club straight, body stout and hairy, the abdomen of the ♀ furnished with a horny pouch, wings rounded, semi-transparent. Pupa enclosed in a rough cocoon.

A. Hind wings with red spots.

B. Fore-wings with four or five black spots. *P. Apollo* and *P. Delius*.

BB. Fore-wings with two black spots. *P. Nordmanni*.

AA. Hind-wings with no red spots. *P. Mnemosyne*.

**P. APOLLO*. 2" 9"—3" 4". F.-w. white, semi-transparent at the tip, and having four or five black spots, very distinct and never confluent. H.-w. white with two large red spots in black rings, and an oval black spot near the inner margin. VI—VII.

Larva pubescent, velvety black, with orange yellow dots, and small bluish tubercles. (Bd.) On saxifrages and Crassulaceæ. V.

**P. DELIUS* (fig. 2). 2" 3"—2" 5". Best distinguished from *Apollo* by its size. The black dots on the f.-w. are small, indistinct, and very liable to become confluent. One of them, also, frequently contains a red dot. VII.

LARVA UNDESCRIBED.

†*P. NORDMANNI*. 2" 8". F.-w. white with two black spots; tip dusky. H.-w. white with two red and orange spots in black rings; inner margin black. (H.S.) VII.

LARVA UNKNOWN.

**P. MNEMOSYNE*. 2"—2" 4". Base of all the wings black. F.-w. white, with two black spots near the costa; h.-w. white, with a dusky spot near the black hind margin. VI—VII.

Larva smoky black, spotted with red and yellow; the incisions darker than the ground-colour. (Freyer.) On *Corydalis Halleri*. IV—V.

Sub-family II. PIERIDES.

All the genera except *Zegris* occur in England. They may be thus tabulated:—

- A. Wings not angulated.
 - B. Wings more or less transparent. 5. *APORIA*.
 - BB. Wings opaque.
 - C. Antennæ rather long and slender. 6. *PIERIS*.
 - CC. Antennæ rather short.
 - D. Hind-wings with a black border. 10. *COLIAS*.
 - DD. Hind-wings with no black border.
 - E. Fore-wings with a discoidal spot or streak.
 - F. Abdomen slender. 7. *ANTHOCHARIS*.
 - FF. Abdomen rather thick. 8. *ZEGRIS*.
 - EE. Fore-wings with no discoidal markings.
 - 9. *LEUCOPHASIA*.
 - AA. Wings angulated. 10. *GONEPTERYX*.

Genus 5. *APORIA*.

Antennæ rather long and thick; wings, especially in ♀, more or less transparent, the veins being very strongly marked.

*A. *CRATÆGI*. 2" 5'''—2" 8'''. Wings white, semi-transparent in the ♀, the veins of the wings black, very distinct, forming triangular dusky spots at the hind-margins. V—VI.

Larva black when young, afterwards clothed with whitish hairs; sides and belly leaden grey with two lateral yellow lines and many black dots. (We.) On hawthorn, sloe, and many kinds of fruit trees. V.

Genus 6. *PIERIS*.

Antennæ rather long and slender, the club very distinct, fore-wings rather pointed at the tip. Ground colour white.

Next to *Papilio*, this is the most extensive genus of the *Papilionidæ*. But not more than seven species occur in Europe.

- A. U. s. h.-w. with greenish veins. *P. Napi*.
 AA. U. s. h.-w. with no greenish veins.
 B. U. s. h.-w. not mottled with green and white.
 C. One dark blotch at the tip of the fore-wings.
 D. Blotch crescent-shaped. *P. Brassicæ*.
 DD. Blotch square or triangular. *P. Rapæ*.
 CC. Two black spots at tip of f.-w. *P. Krueperi*.
 BB. U. s. h.-w. mottled with green and white.
 E. Base dusky. *P. Callidice*.
 EE. Base white. *P. Daplidice* and *P. Chlorigice*.

**P. BRASSICÆ*. 2" 4"—2" 8". F.-w. white, tip black. Two black spots on both sides in the ♀, but only on the u. s. in the ♂. The ♀ has also a short black streak on the inner margin. H.-w. white above, with a black spot on the costa. U. s. f.-w. greenish at tip; h.-w. pale yellowish green, the costal spot showing through, pale brown. IV—X.

Larva bluish green with black dots, and yellow streaks on the back and sides. (O.) On all kinds of cabbage and Cruciferæ generally. VI. IX.

†*P. KRUEPERI*. Expands—? Wings white. F.-w. with two black spots at the tip; h.-w. with a triangular black spot on the costa. A series of very indistinct black marginal spots. U. s. f.-w. yellowish at base and tip. (S.) III—IV. VI—VII.

LARVA UNKNOWN.

**P. RAPÆ*. 1" 6"—2" 2". Very close to *Brassicæ*; but the dark part at the tip of f.-w. is paler than in *Brassicæ*, and very small, and is either square or triangular, not crescent-shaped. The ♂ often has one dark spot on the f.-w. IV—VIII.

Larva dull green with a yellow dorsal stripe, and yellow dots on the sides. (O.) On cabbages and various Cruciferæ. VI. IX.

*P. NAPI. 1" 7'''—1" 11'''. F.-w. white, tip dusky; ♂ with one dark spot above; ♀ with two, and a black dash on the inner margin. H.-w. white, generally with a black spot on the costa. U. s. f.-w. white, the veins conspicuously dusky green, and the spots of the upper side, but fainter; h. w. yellowish, with very broad greenish veins. IV—VIII.

Larva green, spiracles red, each in a yellow spot. (Bd.) On rape and various Cruciferae. VI. IX.

*P. CALLIDICE. 1" 6'''—1" 10'''. Base of all the wings dusky. ♂ f.-w. white, with a central black spot, and some black marginal dots; h.-w. white, unspotted. ♀ f.-w. with a large black central spot, and the hind margin black with oval white spots in it; h.-w. white, hind margin blackish, with oval white spots. U. s. h.-w. green, with whitish spots of the shape of arrow heads. VII—VIII.

Larva very deep greyish blue dotted with black, with four longitudinal white stripes, marked with a citron-yellow spot on each segment. (Bd.) VIII—IX.

*P. DAPLIDICE. 1" 3'''—1" 11'''. Base of all the wings white, ♂ f.-w. white, with a central black spot, tip black *with distinct white spots*; h.-w. white, the green markings beneath showing blackish. ♀ f.-w. white, with a large central spot, the *front half* of the hind margin black, with four white spots; *a black spot* at the anal angle; h.-w. white, with irregular blackish markings at the hind margin. U. s. h.-w. irregularly mottled with green and white. IV—VIII.

Larva dull blue striped with yellow, and dotted with black; head green. (O.) On cabbage, weld, and various other Resedaceae and Cruciferae. VI. IX.

*P. CHLORIDICE. 1" 7'''—1" 10'''. Base of the wings white. ♂ f.-w. white, with a central black spot; short black dashes on the hind margin, *not inclosing distinct white spots*; h.-w. wholly white. ♀ f.-w. white,

with the usual black spot; a series of black markings extend along the hind margin from the tip to the anal angle, but without inclosing distinct white spots; h.-w. white, tinged with light green; hind margin with irregular black markings. U. s. h.-w. irregularly mottled with green and white. V—VIII.

LARVA UNKNOWN.

Genus 7. ANTHOCHARIS.

Fore wings rounded at the tip, which is generally marked with an orange blotch in the ♂, antennæ slender and rather short, abdomen slender. Pupa boat-shaped.

A. Hind wings with pale streaks beneath. *A. Belemia*.

AA. Hind wings with green streaks beneath. *A. Eupheno*.

AAA. Hind wings with no streaks beneath.

B. Hind wings green beneath.

C. Tip of fore wings blackish with white spots.

A. Belia and *A. Tagis*.

CC. Tip of fore wings black, unspotted. *A. Gruneri*.

BB. Hind wings green and white beneath. *A. Cardamines*.

BBB. Hind wings green and yellow beneath. *A. Damone*.

*A. BELEMIA. 1" 5'''—1" 9'''. F.-w. white, with a large black disc. spot, tip greenish black, with white spots; h.-w. white. U. s. f.-w. white, with the disc. spot, tip green, intersected by yellowish or silvery white streaks; h.-w. green, sometimes with yellowish markings, with distinct silvery or (var. *Glauce*) white streaks. II—III. XII.

Larva pubescent, yellow, very finely dotted with black, with rose-red dorsal and lateral streaks. The latter are bordered below with a very distinct white line. (Bd.) On *Cruciferae*.

*A. BELIA. 1" 3'''—1" 9'''. F.-w. white, with a

disc. spot, tip black, with white spots; h.-w. white; u. s. h.-w. *dark green*, with irregular *silvery* spots, or (var. *Ansonia*) *white*, with *yellowish green blotches*. III—IV. VI.

Larva resembles that of *Belemia*, but is less finely dotted with black, and the streaks are blue. (Bd.) On *Biscutella* and other southern *Cruciferae*.

*A. TAGIS. 1" 1'''—1" 3'''. F.-w. white, with a disc. spot, tip black, with several small white spots; h.-w. white. U. s. h.-w. *yellowish green with white (rarely silvery) spots*. II—V.

Larva pubescent, green, very finely dotted with black, with a white lateral band, with a bright red streak above it. (Bd.) On *Iberis pinnata*. VI.

*A. CARDAMINES. 1" 4'''—1" 11'''. F.-w. white, with a black disc. spot, tip greenish black, ♂ with a bright orange blotch extending over the outer half of the wing; h.-w. white. U. s. h.-w. mottled irregularly with white and green. IV—VI.

Larva green, slightly pubescent, very finely dotted with black, with a white lateral stripe. (We.) On *Cardamine impatiens*, *Turritis glabra*, *Brassica campestris*, and other *Cruciferae*. VII.

*A. GRUNERI. 1" 1'''—1" 5'''. ♂ f.-w. white, the outer portion orange, bounded on the inside by a narrow black line obliterating the disc-spot; tip black; h.-w. white. ♀ (H. S.) f.-w. white, with a very large disc. spot, tip black; h.-w. white. U. s. h.-w. green, with yellowish markings and distinct white spots.

LARVA UNKNOWN.

*A. DAMONE. 1" 6'''. ♂ f.-w. yellow, the outer portion reddish orange, with the disc. spot near its inner edge, which is not bounded by a black line; tip black;

h.-w. yellow. ♀ white, without the orange blotch. U. s. h.-w. mottled irregularly with green and yellow. III—IV.

LARVA UNKNOWN.

*A. EUPHENO. 1" 1'''—1" 9'''. ♂ f.-w. yellow, the outer portion reddish orange, bordered inside by a very narrow black line, obliterating the disc. spot; tip black; h.-w. yellow. ♀ f.-w. white, with a large disc. spot, tip brownish yellow; h.-w. white. U. s. h.-w. yellow, with three distinct green streaks. IV—V.

Larva rather bright yellow, dotted with black, with a white lateral band surmounted by a blue streak, and separated from a yellow streak below it by a row of rather large black dots, regularly arranged in pairs on each segment. Head blue. (Bd.) On *Biscutella dydima* and other *Cruciferae*.

Genus 8. ZEGRIS.

Antennæ very short, abdomen rather short and stout; thorax stout, very hairy; pupa with a short obtuse spike in front, and a sort of arched tail behind.

†Z. PYROTHOE. 1" 5'''. Wings white, f.-w. with an oval and slightly triangular orange blotch at the tip, the upper edge of the blotch spotted with black and white; a black disc. lunule. U. s. f.-w. *green* at tip with a white spot; h.-w. *green*, with irregular white spots, mostly oblong. (Bd.) IV.

LARVA UNKNOWN.

Z. EUPHEME. 1" 7'''—1" 9'''. Wings white, f.-w. with a very large disc. lunule; tip green or grey, with an oblong orange streak bordered with black on the inside. U. s. f.-w. *yellow* at tip; h.-w. *yellow*, with greenish streaks and several white spots. IV—VI.

Larva yellow, with a white lateral band and large white dots in three rows on the sides of each segment. (C.) On *Sinapis incana* and other *Cruciferae*.

A rare and very variable species. I have seen six specimens, and no two were alike in the apical markings and those of the u. s. h.-w.

Genus 9. LEUCOPHASIA.

Abdomen very slender and rather long, wings long and narrow, fore wings with no discoidal spot, the whole formation of the insects very delicate.

The three known species, two of which are European, are very closely allied, and may possibly be only varieties of one species.

*L. SINAPIS. 1" 4"—1" 7". F.-w. *white*, with an ash-coloured spot at the tip (except in var. *Erysimi*); h.-w. *white*. U. s. h.-w. *white*, with some obscure dull greenish markings. V—VIII.

Larva green, with a darker dorsal stripe, and yellow lateral ones. (R.) On *Vicia cracca* and other *Leguminosæ*. VI. IX.

*L. LATHYRI. 1" 3"—1" 5". Resembles *Sinapis*, but the base of all the wings is *yellowish*. U. s. h.-w. *greenish* with two white spots. V—VII.

LARVA UNDESCRIBED.

Genus 10. COLIAS.

Antennæ short and rather thick, body moderately stout; abdomen rather shorter than the hind wings; wings without angular projections, yellow or orange, with a black border.

The ♀ of nearly every species is liable to an almost

white variety. (*C. Edusa*, var. *Helice*, is described as the best known example.) The orange species are also liable to be shot with purple or violet.

A. Wings yellow or whitish.

B. A distinct black border to the fore wings.

C. Black border of the fore wings scarcely extending to the anal angle. *C. Hyale*.

CC. Black border of the fore wings fully reaching the anal angle.

D. Wings more than 2" across. *C. Aurorina* ♀.

DD. Wings under 2" across.

E. Border rather broad. *C. Erate*.

EE. Border rather narrow. *C. Palæno*.

BB. No distinct black borders to the fore wings.
C. Phicomone.

AA. Fore-wings orange.

F. Hind wings brown. *C. Thisoa*.

FF. Hind wings orange.

G. Disc. spot of f.-w. long and narrow.
C. Hecla ♂.

GG. Disc. spot of f.-w. more or less rounded.

H. Disc. spot of u. s. f.-w. simple.

K. Black border rather broad.

L. Disc. spot of u. s. h.-w. simple.
C. Heldreichi.

LL. Disc. spot of u. s. h.-w. ocellated. *C. Edusa* and *C. Aurorina* ♂.

KK. Black border rather narrow.
C. Myrmidone.

HH. Disc. spot of u. s. f.-w. ocellated.
C. Hecla ♀ and *C. Chrysotheme*.

**C. PALÆNO*. 1" 6"—1" 9". ♂ pale yellow with a narrow black border divided by yellow veins; a black

disc. spot on f.-w., and an orange spot on h.-w. ♀ nearly white, with black unveined borders variable in width, and spots similar to those of the ♂. Fringes in ♀ rosy. Disc. spots sometimes nearly obsolete. VII—VIII.

Larva green with yellow stripes and black dots. (Wa.) On *Coronilla*.

*C. PHICOMONE. 1" 7"—1" 11". ♂ dark greenish yellow, with a black disc. spot on the f.-w.; h.-w. with a large yellowish white spot. Hind-margin of all the wings blackish, with pale yellow spots; fringes rosy. ♀ greenish white, blackish at the base (compare the description of *C. Edusa*, var. *Helice*). VII—VIII.

Larva green with a white lateral stripe enclosing sulphur-coloured spots in which are the black spiracles. (Freyer). On ———? VII.

*C. HYALE. 1" 5"—2" 1". ♂ f.-w. pale yellow, with a black disc. spot and a broad black border, containing four or five yellow spots, and ceasing before the anal angle; h.-w. pale yellow with an orange spot, and a narrow black border ceasing before it reaches the anal angle. ♀ yellowish white. V. VII—IX.

Larva velvety green, with two lateral yellow stripes, with black dots on each segment. (We.) On *Medicago*, *Trifolium*, *Coronilla varia*, and other Leguminosæ. VI—VII.

*C. ERATE. 1" 7"—1" 10". Pale yellow, with a rather broad black border round all the wings. ♂ with the border of f.-w. unspotted; ♀ with three spots. VIII.

LARVA UNKNOWN.

*C. CHRYSOTHEME. 1" 6"—1" 8". F.-w. pale yellowish orange, disc. spot large and rounded, having a red pupil; borders slightly divided by orange veins in ♂, and spotted with yellow in ♀. H.-w. greenish yellow, disc. spot orange, black border very narrow, having a row of indistinct yellowish spots within it

in ♀. U. s. ♂ f.-w. pale yellow with a disc. spot, as above; costa reddish brown; hind margin greenish, bordered internally by black spots. H.-w. green with a marginal row of black spots; disc. spot red with a silvery pupil, and a much smaller but similar eye close to it.

♀ f.-w. pale orange, costa reddish brown, hind margin broadly green with three black spots within it. H.-w. *dark green, margins paler*. VII—VIII.

LARVA UNKNOWN.

*C. HECLA. 1" 6" — 1" 9". ♂ orange, disc. spot of f.-w. long and narrow; border rather narrow and blackish without orange veins, not scalloped, but angulated internally. H.-w. with the disc. spot very indistinct; inner margin green. ♀ similar, but paler, disc. spot of f.-w. large and round; a row of orange spots in the black border. H.-w. greenish yellow; disc. spot large and red; a row of yellow spots on the inner side of the narrow black border. U. s. h.-w. *very dark green*; a silvery disc. spot in a red ring; fringes, especially in ♀, broadly rosy.

LARVA UNKNOWN.

Most continental authors call this species *Boothii* of Curtis, but I believe that to be perfectly distinct, and much nearer *Chrysotheme*, as I have seen specimens of a *Colias* nearly agreeing with Curtis' figures, which are green, and orange only in the centre of the f.-w. Hence I imagine that the true *Boothii* is unknown on the Continent. I also doubt whether the insect I have described is the true *Hecla* of Lefebvre, as, according to his figures, the costa of the f.-w. is yellow, and the black border is divided by broad orange veins in the ♂.

†C. THISOA. 1" 10". F.-w. brilliant orange yellow shot with violet, with a very broad black border divided

by orange veins; costa and base black; disc. spot oval, rather large. H.-w. brown, sprinkled with greenish yellow shot with violet; disc. spot large, orange yellow; inner margin yellow, sprinkled with brown. Fringes rosy. (M.) VII.

LARVA UNKNOWN.

*C. MYRMIDONE. 1" 2"—1" 9". Very near *Edusa*, but the wings of a redder orange; the black borders of the wings are much narrower. F.-w. with the border rarely veined in the ♂; the spots on the border of f.-w. in the ♀ are smaller, paler, and less numerous. But the marginal spots of the h.-w. are very large and nearly square, of a pale yellow, and extend all round the hind margin within the narrow black border. VII—VIII.

Larva green, dorsal streak darker, lateral streak light green. Hairs short and blackish. (Gartner). On *Cytisus biflorus*. III—IV. X.

*C. EDUSA. 1" 8"—2" 3". ♂ f.-w. orange, costa paler, disc. spot large and black, hind margin broadly black, always divided by distinct orange veins. H.-w. orange with a large red spot, and a broad black hind margin. The typical ♀ has at least three (generally more) distinct yellow spots instead of veins in the black border of the f.-w., and three or four within the border of the h.-w. The ♀ var. *Helice* has yellowish-white wings, and much resembles the ♀ of *Phicomone*, but may be distinguished by its distinct border. V—X.

Larva green with a lateral stripe, varied with white and yellow, and with an orange dot on each segment. (We.) On *Medicago lupulina* and other Leguminosæ. VI—VII.

†C. HELDREICHI. 1" 10"—2" 3". ♂ purplish orange, ♀ gold colour, more or less mixed with black. F.-w. with a disc. spot. All the wings with a black border, mixed with greenish in the ♂, and intersected by orange veins; marked in the ♀ with rather large straw-coloured

spots. U. s. h.-w. ♂ greenish yellow, with the disc. and marginal spots brown; ♀ yellowish grey with indistinct marginal spots. (S.)

LARVA UNKNOWN.

If this species is, as appears probable, the *C. Libanotica* of Lederer, the latter name must be retained.

†C. AURORINA. 2" 2". ♂ deep reddish orange; ♀ white, with the hind margin broadly brown. This border veined in the ♂, and spotted in the ♀. U. s. with a sub-marginal row of spots, as in *Edusa*, &c. Disc. spot of h.-w. square. (E.) VIII.

LARVA UNKNOWN.

It is this species that serves to represent the far rarer Siberian *C. Aurora* Esp. in most cabinets.

Genus 11. GONEPTERYX.

Antennæ short and thick; all the wings with an angular projection, yellow, with no border; body stout, clothed with hair.

*G. RHAMNI. 2" 3"—2" 6". ♂ pale greenish yellow, h.-w. darker; ♀ pale whitish yellow. All the wings with an orange central spot. II—V. VIII—X.

Larva dull green with a white lateral streak. (O.) On blackthorn and buckthorn. V—VII.

*G. CLEOPATRA. 1" 11"—2" 3". ♂ f.-w. orange, costa and hind margin pale greenish yellow; h.-w. greenish yellow, darker than in *Rhamni*. ♀ paler than *Rhamni*, but otherwise similar. This species has the wings less angulated than *Rhamni*. II—III. VI—VIII.

Larva similar to that of *Rhamni*, but the back is bluish, and the lateral streak narrower. (O.) On *Rhamnus alpinus*.

FAMILY II. DANAIDÆ.

Fore legs rudimentary in both sexes; club of the antennæ gradually formed; hind wings not grooved; larva tolerably stout, cylindrical, smooth, furnished with one or more pairs of long, slender, fleshy filaments; pupa suspended by the tail only.

Genus 1. DANAIS.

Antennæ as long as half the body. Costa of f.-w. arched, hind margin slightly curved; h.-w. rounded. Ground colour almost always fulvous.

*D. CHRYSIPPUS (fig. 3). 2" 4''' — 3" 4'''. Pale reddish fulvous. F.-w. with the costal part darker, tip black, the colour narrowly extending to the anal angle, and half way along the costa; a white band of confluent spots runs across the black tip, and there are a few white spots on each side of it. H.-w. with three black spots in the centre (ground colour white in var. *Alcippus*); hind margin black spotted with white.

Larva pale bluish grey with transverse black streaks, dorsal stripe chrome-yellow edged with black on both sides, lateral stripe chrome yellow. The third, sixth, and twelfth segments, with a pair of black elastic filaments on the back, crimson at their base; the front pair the longest. (Trimen.) *On Asclepiadæ*.

FAMILY III. NYMPHALIDÆ.

Fore legs rudimentary in both sexes, antennæ with a distinct club, never hooked; hind wings with a groove to receive the abdomen; larva usually covered with strong spines, or smooth, with the head or tail forked; pupa suspended by the tail only.

Five sub-families occur in Europe.

- A. Fore-wings with at least one projection in the hind margin. 2. VANESSIDES.
- AA. Fore-wings without projections in the centre of the hind margin.
 - B. Fore-wings with a central pale band, and with no small ocelli beneath.
 - C. Eyes naked. 3. APATURIDES.
 - CC. Eyes hairy. 4. NYMPHALIDES.
 - BB. Fore-wings often with a marginal pale band, generally with numerous ocelli above and beneath. 5. HIPPARCHIDES.
 - BBB. Fore-wings fulvous or tawny, without ocelli. 1. ARGYNNIDES.

Sub-family I. ARGYNNIDES.

Wings rounded or hind margin of fore wings concave; ground colour fulvous with black markings, eyes naked, larva spiny. But two European genera are known.

- A. U. s. h.-w. generally with yellow blotches and bands. 1. MELITÆA.
- AA. U. s. h.-w. generally more or less purple or green with silvery markings. 2. ARGYNNIS.

Genus 1. MELITÆA.

Antennæ with a moderately long, very large, and flattened club; fore wings with the hind margin rounded; wings beneath with yellow markings, but never silvery.

- A. U. s. h.-w. with large black basal spots.
 - B. The tawny or reddish spots near the base of u. s. h.-w. not confluent. *M. Trivia*.
 - BB. These spots confluent.
 - C. The confluent spots not enclosing pale spots. *M. Didyma*.
 - CC. The spots enclosing one or more pale spots.
 - D. U. s. h.-w. with the outer band composed of yellowish spots with fulvous pupils. *M. Phoebe*.

- DD. U. s. h.-w. with the outer band composed of fulvous spots with black pupils.
- E. The band with all the spots quadrangular. *M. Cinxia*.
- EE. The band with few or none of the spots quadrangular. *M. Arduinna*.
- AA. U. s. h.-w. with no black basal spots.
- F. Wings with pale or whitish spots above.
- G. U. s. h.-w. with the outer fulvous band marked with a row of black dots. *M. Artemis* and *M. Desfontainesii*.
- GG. U. s. h.-w. without black dots in the outer fulvous band.
- H. F.-w. with white basal spots. *M. Cynthia* ♂.
- HH. F.-w. without white basal spots.
- K. U. s. h.-w. with the central pale band bisected by a black line. *M. Maturna* and *M. Cynthia* ♀.
- KK. U. s. h.-w. with the central band not thus bisected. *M. Iduna*.
- FF. Wings with no markings paler than the ground colour.
- L. Ground colour of the wings fulvous. *M. Deione* and *M. Britomartis*.
- LL. Wings with about equally extensive black and fulvous markings. *M. Athalia* and *M. Asteria*.
- LLL. Ground colour of the wings blackish brown. *M. Dictynna* and *M. Parthenie*.

**M. CYNTHIA*. 1" 5'''—1" 6'''. ♂ f.-w. black with indistinct red dots; an interrupted white band runs across the centre, and there are three square white spots near the base. H.-w. black, bordered with a row of white spots, and having a white band across the centre. ♀ all the wings dull fulvous, black at the base. F.-w. with narrow black bands. U. s. h.-w. with three rows

of large white spots, the central one *partially bisected* by a black line. The spots are separated by red bands. VII—VIII.

Larva bright green on the back; the sides paler, with a black line separating the two shades of colour; spines black; head reddish brown. (V.G.) On *Plantago lanceolata*.

*M. IDUNA. 1" 2"—1" 4". F.-w. black with four white bands (smaller in the ♀ than in the ♂), running across them, the two middle ones coalescing; the bands are separated by red spots, and there are no white basal spots on f.-w. H.-w. black with a red spot near the base; the hind margin with a row of white spots, a row of red ones within that, and then a second row of white ones. VII.

LARVA UNKNOWN.

M. MATURNA. 1" 5"—1" 9". Very like *Artemis*, but redder, the pale markings are whiter and more distinct, and there is a row of more or less distinct whitish spots on the hind margin of h.-w., instead of the row of black dots we find in *Artemis*. U. s. h.-w. bright fulvous red with three yellow bands; the central one *bisected through its whole length* by a black line. VI.

Larva black with three rows of pale yellow spots, the uppermost divided by a black line; head and spines black. (V.G.) On *Plantago* and *Scabiosa succisa*.

*M. ARTEMIS. 1" 4"—2" 2" *Deep fulvous*. F.-w. with several rows of pale yellow spots, sometimes running together so as to form bands, separated by black lines. H.-w. fulvous with some yellowish spots near the base; a row of yellow spots across the centre, and a row of black dots near the hind margin. The hind margin of all the wings narrowly black; a few yellow dots within that of the h.-w. U. s. *similar but paler, the markings most distinct on the h.-w.* V—VIII.

Larva black with three lateral rows of small white dots;

legs yellow, head and spines black. (V.G.) On *Scabiosa succisa*, *Teucrium Scorodonia*, *Digitalis purpurea*, and *Plantago*. IV. VII. IX.

†M. DESFONTAINESII. 2" 1". Fulvous, paler than *Artemis* usually is. F.-w. with three rows of yellow spots; h.-w. with one row, and a marginal row of yellowish white lunules marked with brown. U. s. f.-w. fulvous, with the yellow bands bordered with black and very strongly marked; h.-w. pale ochre, with the markings of the upper side faintly yellowish. (R.)

LARVA UNKNOWN.

M. Bætica is the name which this insect ought to bear, but owing to the existence of a *Polyommatus Bæticus* I have adopted the above name to lessen confusion.

*M. CIXIA. 1" 6"—2". Fulvous with numerous black dashes and interrupted lines; base and hind margins black. U. s. f.-w. pale fulvous with a few black dots; tip yellow. H.-w. fulvous, hind margin bordered by a yellow band enclosing a row of black dots. A broad yellow band across the middle of the wings; nearer the base are several yellow spots. V—VI. VIII.

Larva black, spotted with bluish-white ocellated spots; spines black, head reddish brown. (O.) On *Plantago lanceolata*, *Hieracium Pilosella*, and *Veronica*. IV—V. VIII—IX.

*M. ARDUINNA. 1" 5"—1" 7". Fulvous, irregularly spotted with black. U. s. h.-w. fulvous, with several yellow bands, much broader than in *Cinxia*, which always enclose black dots. V—VI.

LARVA UNKNOWN.

*M. PHÆBE. 1" 7"—1" 9". F.-w. pale yellowish fulvous, with several distinct black lines. H.-w. black with a row of red spots with black pupils towards the hind margin, having a yellowish fulvous band on each

side. U. s. f.-w. pale fulvous with a row of white spots across the centre; hind margin whitish yellow. H.-w. with alternate bands of red and white, bordered with black lines. V—VIII.

Larva black with white spots and a fulvous lateral band, preceded by a row of bluish violet dots. Belly and prolegs reddish grey. Spines black; those on the fulvous band of that colour. (V.G.) On *Centaurea jacea*. V—IX.

*M. DIDYMA. 1" 4"—1" 8". Deep reddish fulvous. F.-w. with a row of black spots on the hind margin, and another in the centre, and several other black spots. H.-w. with a marginal row of black spots and other indistinct scattered black markings. U. s. f.-w. pale fulvous, with similar markings to those on the upper side; tip straw colour. H.-w. with two distinct reddish bands, separated by rows of black dots. VI. VIII.

Larva slate colour; the fore part of each segment darker dotted with white, and furnished with a row of white and fulvous spines; belly pale yellow; head and prolegs fulvous; legs black. (V.G.) On *Plantago* and several other plants. IV—VI.

*M. TRIVIA. 1" 4"—1" 7". Very similar above to some varieties of *Didyma*; but the h.-w. have at least three rows of black spots. U. s. resembles *Didyma*; but the whole hind margin of the f.-w. is straw colour. VI—VIII.

Larva greyish white, with longitudinal lines and dots, partly brownish, partly bluish, most conspicuous on the sides; spines red at the base, white at the tip; head red with black dots; legs white spotted with black. (V.G.) On *Verbascum Thapsus* and *nigrum*. VI.

M. DEIONE. 1" 5". F.-w. fulvous, not broadly black at the base, with *two* distinct black lines across the wings; a third starts from the costa between these, but soon coalesces with the outer one. H.-w. fulvous with

three black lines, one on the hind margin. Inner margin black; as the other two lines approach it, they become much wider. On the costa, too, they form black spots. U. s. f.-w. pale fulvous, slightly yellowish at the tip; six short black lines running from the costa, and a black spot near the centre of the inner margin. H.-w. marked with red and white, as in the allied species. V—VII.

LARVA UNDESCRIBED.

*M. *ATHALIA*. 1" 4" — 1" 6". Wings black with *three* distinct fulvous bands, and several fulvous spots within them. U. s. f.-w. pale fulvous; the bands of the upper surface only visible near the costa; hind margin straw colour. H.-w. similarly marked to the allied species; but the central straw-coloured band is unusually broad, and there are no black spots. V—VIII.

Larva black and spiny, with two white dotted lines on each segment, and white tubercles on the sides. (We.) On *Plantago* and *Melampyrum sylvaticum*. V. IX.

*M. *DICTYNNA*. 1" 3" — 1" 6". F.-w. *black* with two or more rows of red spots and several spots between these and the base. H.-w. *black* with two marginal rows of red dots and sometimes a third. U. s. f.-w. *fulvous*, yellowish at the tip. H.-w. *white* with two red bands, the one nearest the base enclosing yellow dots. VI—VII.

Larva violet brown, dotted with bluish grey; spines paler, black at the tip; three longitudinal black lines; head black with two bluish grey spots. (V.G.) On *Veronica Agrestis*. V.

M. *BRITOMARTIS*. 1" 4". Fulvous. F.-w. with *three* distinct black lines reaching across the outer part of the wing, and several shorter ones nearer the base. H.-w. with *two* black lines in the outer part of the wing; costa, base, and inner margin moderately broadly black. U. s. h.-w. with the base reddish spotted with yellowish white, then a yellowish white band followed by a red

one; hind margin yellowish white. All these bands divided into round or oval spots by the black veins. VI—VII.

Larva black, spotted in front above with rusty yellow; in each spot is a white wart covered with black hair. These, when confluent, form interrupted bands. Hind part of the body white with transverse violet grey stripes, and a dorsal and two lateral stripes darker. (Prittwitz). On *Veronica*.

*M. PARTHENIE. 1" 3"—1" 4". Black at the base. F.-w. *fulvous* with three more or less distinct black lines; h.-w. *fulvous* with two marginal black lines. U. s. f.-w. *fulvous* with *interrupted black lines*, tip slightly yellowish; h.-w. *yellow* with two red bands. VI—VIII.

Larva black with very small indistinct white dots, some fine white hairs, and an indistinct lateral series of yellow blotches. (V.G.) On *Plantago*.

M. ASTERIA. 1" 1". F.-w. black with *four bands of red spots*; h.-w. black with *two* marginal rows of red spots, and one or two detached spots within them. U. s. f.-w. pale *fulvous* with four black lines; hind margin slightly yellow; h.-w. white with two red bands, but no distinct black markings.

LARVA UNKNOWN.

Genus 2. ARGYNNIS.

Antennæ with a short broad club. Fore wings with the hind margin rounded or slightly concave; hind wings generally green or purple beneath, with silvery spots or streaks.

A. U. s. h.-w. with silvery or whitish streaks.

B. U. s. f.-w. rose colour. *A. Pandora*.

BB. U. s. f.-w. not rose colour.

C. Outer half of u. s. h.-w. purple. *A. Laodice*.

CC. Outer half of u. s. h.-w. not purple. *A. Paphia*.

AA. U. s. h.-w. without silvery streaks.

- D. U. s. h.-w. without rows of ocelli or black dots.
- E. U. s. h.-w. with no silvery marginal spots. *A. Alexandra*.
- EE. U. s. h.-w. with silvery marginal spots. *A. Aglaia*.
- DD. U. s. h.-w. with rows of ocelli or black dots.
- F. U. s. h.-w. with no purplish tinge and no extensive red markings.
- G. Silvery spots very large, oval. *A. Lathonia* and *A. Eugenia*.
- GG. Silvery spots of moderate size, generally rounded.
- H. Wings with a very few scattered black spots above. *A. Cyrene*.
- HH. Wings with numerous black spots.
- K. F.-w. with six marginal spots. *A. Niobe*.
- KK. F.-w. with five marginal spots. *A. Adippe*.
- FF. U. s. h.-w. tinged extensively with purple or reddish.
- L. U. s. h.-w. rarely with silvery markings.
- M. H.-w. broadly black at the base. *A. Polaris*, *A. Freyja*, and *A. Frigga*.
- MM. Wings slightly, if at all, black at base.
- N. U. s. h.-w. with two rows of black spots. *A. Hecate*.
- NN. U. s. h.-w. without rows of black spots.
- O. F.-w. with black lines. *A. Aphirape*.
- OO. F.-w. with black spots.
- P. U. s. h.-w. with no black spots. *A. Daphne*.
- PP. U. s. h.-w. with two black spots. *A. Ino*.
- LL. U. s. h.-w. with silvery markings.
- Q. H.-w. black with very few fulvous markings. *A. Thore*.
- QQ. H.-w. almost entirely fulvous.
- R. Wings with an indented sub-marginal line.
- S. Ground colour of u. s. h.-w. straw colour. *A. Selenis*.

SS. Ground colour of u. s. h.-w. reddish brown.

A. Chariclea.

SSS. Ground colour of u. s. h.-w. red and yellow.

T. U. s. h.-w. with a central band of silvery spots. *A. Selene.*

TT. U. s. h.-w. with one large central silvery spot. *A. Euphrosyne.*

RR. Wings with no indented sub-marginal line.

U. Marginal spots of u. s. h.-w. yellow.
A. Amathusia.

UU. Marginal spots of u. s. h.-w. silvery.
A. Dia and *A. Pales.*

*A. APHIRAPE. 1" 5'''—1 6'''. Bright fulvous, black at the base, and with three distinct black lines on the centre of the f.-w., running from the costa to the inner margin, where, in the ♀, they coalesce and form a triangular blotch. Hind margin black, with an indented black line enclosing fulvous spots; within this is a row of black spots on all the wings. U. s. h.-w. similar to *Selene*; but the pale spots are yellowish, rarely silvery, and disposed to become confluent and form bands, as in the genus *Melitæa*, which it seems to connect with *Argynnis*. VI.

Larva short and thick, clear silvery grey, with a white lateral streak. (V.G.) On *Polygonum bistorta*. V.

*A. SELENIS. 1" 3'''—1" 5'''. Very similar to *Selene* above; but with a crooked row of rather large black spots on all the wings. U. s. h.-w. straw colour, sometimes with a marginal row of small silvery spots, and always with a row of silvery or purple dots across the centre. V—VII.

LARVA UNKNOWN.

*A. SELENE. 1" 6'''—1" 10'''. Fulvous; the base, especially of h.-w., black, the central spots forming no distinct lines; the marginal markings as in *Aphirape*.

U. s. h.-w. with a marginal row of silvery spots, followed by a purplish red band with a large yellow spot in the middle; next to this is an irregular band of silvery and yellow spots. Between this and a basal row of silvery spots is another reddish band. V—VIII.

Larva black, marked with dull grey; spines reddish yellow; head black; legs brownish red. (V.G.) On *Viola canina*. VI. IX.

*A. EUPHROSYNE. 1" 8"—1" 10". Very close to *Selene* above. U. s. h.-w. with similar markings; but the purplish markings are replaced by pale red, and only the marginal spots, one spot in the central band and one near the base, are silvery, the other silvery markings of *Selene* being replaced by yellow. V—VIII.

Larva black with a lateral row of white dots, and two small white lines inclining towards one another on the back of each segment; prolegs reddish; spines and head black. (V.G.) On *Viola canina* and *montana*. VI. IX.

*A. PALES. 1" 2"—1" 5". Fulvous; base black; two marginal rows of black spots on all the wings. U. s. h.-w. with a marginal row of silvery spots, the centre *spotted with purple, red, greenish yellow*, and angular silvery spots. VII—VIII.

Larva brownish grey, with a sulphur-yellow dorsal streak intersected by a fine line; spines short, flesh coloured; warts velvety black. (Freyer). On *Viola montana*. VII.

†A. CHARICLEA. 1" 6". Wings bright yellowish fulvous with black spots; base black. U. s. h.-w. reddish brown, base darker, marked with a row of small silvery dots, followed by a very distinct silvery band mixed with yellow dashes and slightly tinged with red, bordered with black on the outside. The rest of the wing is slightly mixed with yellow, with an obscure whitish

violet band, a row of red dots, and a marginal row of very distinct ovoid-oblong silvery spots surmounted with red triangles. (V.G.) VII.

LARVA UNKNOWN.

†A. POLARIS. 1" 6". Fulvous, with black spots; base black. U. s. h.-w. *ferruginous brown*, with white spots and transverse fasciæ, and with marginal lunules in the form of a T, and also a milk-white disc. spot. (Wa). VI—VII.

LARVA UNKNOWN.

*A. FREYJA. 1" 4"—1" 8". Fulvous, with black spots; those of the h.-w. running in lines; base broadly black. U. s. h.-w. *dull reddish brown*, with a marginal row of spots, and the central spots whitish. Disc. spot white *with a black pupil*. VI—VII.

LARVA UNKNOWN.

*A. DIA. 1" 3"—1" 5". Fulvous, with large and numerous black spots; base black. U. s. h.-w. base reddish black, next a band of *three silvery and three yellow spots*; between these and the silvery marginal spots is a *purple band*; a row of black spots with white pupils runs parallel to the marginal spots. V—VIII.

Larva dark brown or black; back paler; dorsal line black; spines whitish grey; legs black. (V.G.) On different species of violet. VII. IX.

There is very little doubt that this species has been taken in England.

*A. AMATHUSIA. 1" 4"—1" 9". Fulvous; the black spots less numerous than in *Dia*; base black; hind margin black with two rows of black spots running parallel to it, the outer row tending to be confluent. U. s. h.-w. similar to *Dia*, but with paler silvery spots; the basal portion of the wing marbled with red and yellow; this is separated by a crooked black line from the marginal portion. VII—VIII.

Larva dark grey, with a row of black spots and yellow spines on the back. Head and legs blackish. (V.G.) On *Polygonum bistorta*. V.

*A. FRIGGA. 1" 6"—1" 7". Fulvous; broadly black at base; hind margin black, with two parallel rows of black spots; f. w. with four black transverse streaks, two coalescing with the others before reaching the inner margin. The outermost of the two longer streaks runs across the h.-w., and in the ♀ is *almost lost in the black* at the base. U. s. h.-w. in the ♂ with the *basal portion red* with two *white spots*; *marginal portion deep purple*. In the ♀ the white spots are wanting, but a row of yellow spots much mixed with red runs across the middle of the red basal markings. VII.

LARVA UNKNOWN.

*A. THORE. 1" 5"—1" 7". Similar above to *Frigga*, but darker; h.-w. black with one or two fulvous bands. U. s. h.-w. pale brownish, with a central band of yellow spots, outside which is an interrupted band of pale bluish-silvery spots. Marginal spots pale blue. V—VII.

LARVA UNKNOWN.

*A. DAPHNE. 1" 7"—1" 11". Fulvous; hind margin black; with two rows of black spots running within it. Nearer the base are other irregular black spots. U. s. h.-w. greenish yellow towards the base; the marginal portion dull brown, mixed with bluish purple. VI—VII.

Larva blackish brown, with yellow or whitish longitudinal streaks and a large dorsal band of the same colour; six rows of bright yellow spines, black at the tip. (V. G.) On *Rubus idæus*. V.

*A. INO. 1" 4"—1" 8". Similar above to *Daphne*, but blacker at the base, and the scattered black spots have a greater tendency to form bands. U. s. h.-w. yellow towards the base; the marginal portion yellowish brown; near the inner limits of this latter colour are two blackish spots. VI—VII.

Larva whitish yellow, longitudinally striped with brown, with a brown dorsal stripe, and spines of the ground colour. Head partly brown and partly pale yellow. (V.G.) On *Urtica urens*. V.

*A. HECATE. 1" 5"—1" 6". Similar above to the last two species, but darker, and with fewer black spots. U. s. h.-w. marbled with red and yellow, and with two rows of black spots preceding the sub-terminal line. VI—VII.

LARVA UNKNOWN.

*A. LATHONIA. 1" 9"—2" 1". Fulvous, with *two marginal rows of black spots*. A few irregular black spots nearer the base, which is rather broadly black. U. s. f.-w. yellowish fulvous with black spots and a few oval silvery spots at the tip; h.-w. with a row of very large oval silvery spots extending completely round them, and a central large oval silvery spot. Between this and the silvery spots on the hind margin is a *red band* containing a *row of silvery dots*, the rest of the wing yellowish fulvous. V—VI. VIII—IX.

Larva brownish green, with a white dorsal streak, with two brownish yellow lateral streaks, and the incisions of the same colour; spines and feet ochre-yellow. (O.) On *Viola tricolor* and other low plants. V. VII—VIII.

†A. EUGENIA. 1" 5"—1" 8".—Fulvous, with a *marginal line* enclosing fulvous lunules, and a row of black spots within that. Much lighter at the base than *Lathonia*; the irregular costal streaks longer and more slender. U. s. h.-w. with the silvery spots still more oval than in *Lathonia*. The central band of large spots encloses a *yellow spot*, and between the central and marginal bands runs a *row of yellow spots enclosing black ones* slightly dusted with yellow.

LARVA UNKNOWN.

*A. CYRENE. 2". Fulvous; costa of f.-w. greenish; all the hind margins black, with a row of black spots running within them; but besides this row there are very few black spots, and these are small and scattered. The wings are slightly dusky at the base. U. s. f.-w. yellowish fulvous at base. Costa and hind margin greenish. H.-w. metallic green at base, shading off into yellow towards the hind margin, where there is a row of silvery spots. An angulated band of silvery spots runs across the centre of the h.-w., and between this and the base are a few scattered silvery spots. VI—VII.

LARVA UNKNOWN.

†A. ALEXANDRA. 2" 1". Very close to *Aglaia* above. U. s. f.-w. base and centre purplish; h.-w. dull fulvous, base greenish; marginal spots green, not silvery; two silvery basal spots, three outside these, and a band of silvery spots beyond the middle of the wing. (M.) VI.

LARVA UNKNOWN.

*A. AGLAIA. 2" 3"—2" 6". F.-w. fulvous, narrowly black at the base; hind margin black with an indented black line, enclosing fulvous spots, running round all the wings; a row of six large black spots runs almost straight across the f.-w.; between this and the base are several black spots and costal lines, one of which reaches across the wings; h.-w. fulvous; base black; this colour extending along the inner margin. A long black blotch starts from about the middle of the hind margin, running straight nearly across the wing. Between the base and the indented marginal line is a row of five black spots. U. s. f.-w. fulvous, tip greenish, with a few silvery spots, the green extending along the costa and hind margin. H.-w. greenish, with a marginal row of silvery spots. A band of silvery spots runs across the centre, and between this and the base are six others. VII.

Larva blackish with a yellow dorsal stripe and brick-red lateral spots; spines black. (O.) On *Viola canina*. V—VI.

*A. NIOBE. 1" 8"—2" 1". Much resembles *Aglaia* above; the row of black spots inside the marginal line comprises six on the f.-w. and five on the h.-w. U. s. h.-w. pale yellow, of a slightly greenish tint; the pale spots are yellowish, rarely silvery; there is a row of four at the base, then three large ones (between these is a small black or silvery dot); generally traces of another row of smaller ones, next a row of seven rather large ones, the central one small; outside this is a row of red spots with silvery pupils, and the marginal row of seven silvery or yellow spots. VII—VIII.

Larva brownish with a black dorsal stripe bordered with white, a black lateral stripe, and between the two some triangular white blotches. (V.G.) On *Viola odorata*. V.

*A. ADIPPE. 1" 10"—2" 2". Very close to *Niobe*; but the third spot of the row of six on the f.-w. of that species is wanting. The corresponding row on the h.-w. has only three spots. U. s. h.-w. very similar to *Niobe*, but with no greenish tinge (except in var. *Chlorodippe*); the pale spots are silvery (clear yellow in var. *Cleodoxa*). The dot between the two rows of spots nearest the base is wanting. VII.

Larva brownish green with an interrupted dorsal stripe, sloping blackish streaks, and lighter coloured spines. (O.) On *Viola odorata* and *tricolor*. V—VII.

*A. LAODICE. 2"—2" 5". Fulvous; base greenish; hind margin spotted with black; two rows of large black spots a little nearer the base. F.-w. with three short black costal streaks between the base and the innermost row of spots; nearer the base are several irregular black spots. U. s. f.-w. yellowish fulvous with black spots, and a few obscure white ones. H.-w. with the basal portion yellow. This colour is bounded outside by an irregular white or slightly silvery band; the marginal portion of the wing purple. VI—VII.

LARVA UNKNOWN.

*A. PAPHIA. 2" 6"—2" 11". ♂ bright fulvous, with several blackstreaks running outwards along the nervures otherwise similar to *Laodice*. ♀ very similar to *Laodice* above. U. s. f.-w. fulvous; tip green. H.-w. green with a silvery streak across the centre and two shorter ones nearer the base; hind margin with a more or less distinct silvery streak (♀ var. *Valesina* dark blackish brown, with black spots; f.-w. with some white spots near the tip). VII—VIII.

Larva dark red, streaked with blackish on the sides, with a yellow dorsal band divided by a brown line. (V.G.) On *Viola canina*. V—VI.

*A. PANDORA. 2" 3"—3". Greenish fulvous. Hind margin black with two rows of black spots; within these is a black line running across all the wings, and a few short black lines still nearer the base. U. s. f.-w. rose colour with black spots; tip yellowish green with green markings; this colour extending along the costa and hind margin. H.-w. green with a marginal silvery streak, and two others across the centre; between the two outer ones is a row of small silvery dots. VI—VII.

LARVA UNKNOWN.

Sub-family II. VANESSIDES.

Eyes pubescent; wings with angular projections; club of the antennæ abruptly formed. Contains four European genera.

A. A distinct whitish band running across the centre of both pair of wings beneath. 3. ARASCHNIA.

AA. Wings beneath with no whitish central band.

B. Hind wings with a short tail. 4. GRAPTA.

BB. Hind wings with a strong projection in the middle of the hind margin. 5. VANESSA.

BBB. Hind wings with no projections. 6. PYRAMEIS.

Genus 3. ARASCHNIA.

Hind margin of the fore wings with two slight projections; hind wings strongly dentated; abdomen long and entirely free; the inner margin of the hind wings concave, very slightly grooved.

*A. PRORSA. 1" 4". (*Prorsa*, summer var. fig. 4). Black, with a red marginal line. Next to this on the f.-w. are a few white dots; then an interrupted broad white band, extending across both wings. U. s. brownish red with the white band of the upper side; hind margins dull white; some whitish dashes near the base. (*Levana*, spring var.). Fulvous with black spots; three white spots near the tip of f.-w., and a row of black spots across all the wings. U. s. similar to *Prorsa*, but mixed with yellow; the white band narrower and less conspicuous. IV—VIII.

Larva black or greyish, dotted with white, with black or yellow spines; prolegs black, yellowish at the extremities. (V. G.) On *Urtica dioica*. VI. IX.

Genus 4. GRAPTA.

Fore wings with the inner margin very strongly emarginate; hind wings with a short tail, the inner margin grooved to receive the abdomen. A well-defined white letter-like mark on the underside of the hind wings.

*G. EGEA. 1" 8"—2". *Pale* fulvous, hind margins darker. Markings above similar to *C-album*, but the black spots smaller. U. s. h.-w. with a small white mark composed of two *short lines*, forming an *acute angle*. IV. VI. IX.

Larva clear blue, with black and yellow transverse stripes on the second segment. The remaining segments with strong spines. (Prittwitz.) On *Parietaria officinalis*.

*G. C-ALBUM. 1" 5"—2" 4". *Deep* fulvous, hind margins brown. F.-w. with three black spots on the

costa, three in the centre, and one on the inner margin. H.-w. with black and brown markings, chiefly towards the hind margin. U. s. h.-w. with a small white curved line shaped like the letter C. IV—IX.

Larva spiny, reddish in front, the hinder part white. The sides of the head produced above into two conical tubercles. (We.) On elm, currant, nettle, and several other trees and plants. VI—VII.

• Genus 5. VANESSA.

Fore wings with the inner margin nearly straight; hind wings with a strong angular projection in the middle of the hind margin.

A. Wings purplish chocolate. *V. Antiopa*.

AA. Wings dark red. *V. Io*.

AAA. Wings fulvous or reddish orange.

B. Hind wings with a white blotch on the costa.
V. V-album.

BB. Hind wings with no white blotch on the costa.

C. All the wings with marginal blue spots. *V. Urticæ*.

CC. Only the hind wings with marginal blue spots.

D. Tip of fore wings with a small white transverse mark. *V. Xanthomelas*.

DD. Tip of fore wings without the white mark.
V. Polychloros.

*V. POLYCHLOROS. 1" 8"—2" 8". Deep fulvous, hind margins rather broadly black. F.-w. with three black costal blotches, separated by pale yellow spots; three black spots in the centre, a fourth near the anal angle. H.-w. with the border marked with blue lunules; a large black blotch in the centre of the costa, bounded exteriorly by a pale yellow blotch. III—V. VII—IX.

Larva blackish or brownish, with a lateral yellow line; spines yellow. (We.) On elm. V—VIII.

*V. XANTHOMELAS. 2"—2" 4". Very close to *Poly-chloros*, but redder; the blue lunules of the h.-w. larger.

There is only one yellow and one white spot on the costa of the f.-w., near the tip, and the yellow spot of the h.-w. is hardly perceptible. VII—IX.

Larva black with two white dorsal lines; spines black. Head and legs black; prolegs fulvous. (V.G.) On different species of *Salix*. VI—VII.

*V. V-ALBUM. 1" 11"—2" 4". Markings similar to those of the last two species; ground colour still deeper than in *Polychloros*. F.-w. tip black with a large white triangular spot. H.-w. with a large white blotch on the costa. A yellowish marginal band runs within the black hind margin of the h.-w. The blue lunules are entirely absent. VI—VII.

Larva brownish red, with a violet or black dorsal line, and two yellowish lateral stripes; spines white. (V.G.) On elm and willow. VI.

*V. URTICÆ. 1" 6"—2" 3". Reddish orange, hind margins black, spotted with blue on all the wings. F.-w. with three black costal spots separated by yellowish ones. A white spot between the outermost black spot and the black hind margin. A large black spot near the inner margin with a yellowish one outside it, and (except in var. *Ichnusa*) two small black ones in the centre of the f.-w. H.-w. broadly black at the base, with a broad reddish orange band between this and the black hind margin. I—XII.

Larva dusky, varied with green and brown, with paler dorsal and lateral lines. Head and spines black. (We.) On nettle. VI—VII.

*V. Io. 1" 10"—2" 9". Dark red, hind margins brown. F.-w. with two central black costal blotches, separated by a small yellow spot. The rest of the costal portion of the wing, between the outermost black blotch and the border, varied with yellow, black, blue, red, and white; and below these markings are two white spots. H.-w. with a black crescent-shaped costal mark. Between

this and the hind margin is a yellowish white ring, enclosing a very large black spot in which are several blue markings. III—IX.

Larva black, very spiny, dotted with white. Prolegs red. (V.G.) On nettle. VI—VIII.

*V. ANTIOPA. 2" 4"—3" 4". Purplish chocolate, hind margins yellow or white; within this pale border is a black band spotted with blue. F.-w. with two white costal spots. III—V. VII—X.

Larva black, with a dorsal row of red spots; prolegs red. (V.G.) On willow and other trees. VI—VIII.

Genus 6. PYRAMEIS.

Fore wings very little angulated; inner margin nearly straight or slightly emarginate; hind wings rounded and scalloped.

A. Fore wings with a small eye near the anal angle.

P. Ionia.

AA. Fore wings without the eye.

B. Fore wings with a red transverse band. *P. Atalanta.*

BB. Fore wings with no red band. *P. Cardui.*

*P. ATALANTA. 2" 1"—2" 10". Black. F.-w. with an orange red band across the centre; tip with several white spots. H.-w. black; hind margin broadly orange spotted with black. U. s. h.-w. varied with different shades of grey; a yellowish blotch in the centre of the costa; hind margin yellowish. VI—X.

Larva dull greenish yellow or ashy violet; spines yellow; head black; legs brown. (V.G.) On nettle. VI—IX.

*P. CARDUI. 2"—2" 8". Flesh colour or pale orange; blackish at the base. F.-w. black at tip with several white spots; hind margin black. A transverse band of three nearly confluent spots across the centre of the orange. H.-w. hind margin spotted with black, and two

rows of black spots within it; a blue spot at anal angle. U. s. f.-w. pink; tip yellowish grey; otherwise nearly as above. H.-w. yellowish grey marbled with different colours; a large whitish triangular spot in the centre. Hind margin with a bluish line hardly divided into spots, within which are four black eyes in pale rings. III—V. VII—IX.

Larva brown with interrupted yellow lateral lines. (We.) On various species of thistle. VI—VIII.

†P. IONIA. 1" 8"—1" 9". Fulvous, sometimes mixed with white and yellow; base broadly black; small eyes at the anal angles of all the wings, and a few irregular black spots. U. s. h.-w. blue or yellow with a dark central band not reaching quite across. (F.)

LARVA UNKNOWN.

This species, though considered a *Vanessa* by F. and S. (the latter places it after *Cardui*), doubtless belongs to a new European genus, as H. S. has taken it for an *Apatura*. Not having seen the insect myself, I dare not form a new genus for it.

Sub-family III. NYMPHALIDES.

Eyes pubescent, body rather long, wings rounded. Larva with no horns on the head, generally spiny with lateral fascicles of hairs.

As this sub-family is very similar to the next in its perfect state, I give here a table of the five genera they contain.

A. Hind wings with two tails. 11. CHARAXES.

AA. Hind wings with no tails.

B. Fore wings with a white basal streak. 7. NEPTIS.

BB. Fore wings with no basal streak.

C. A red line towards the tip of the fore wings.

9. NYMPHALIS.

CC. No red line near the tip of the fore wings.

D. A very distinct ocellated spot at the anal angle of the hind wings. 10. APATURA.

DD. No distinct ocellated spot at the anal angle of the hind wings. 8. LIMENITIS.

Genus 7. NEPTIS.

Fore wings oblong; costa arched; hind margins rounded, and in the hind wings dentated; antennæ slender; abdominal groove very slight. India is the metropolis of this genus.

*N. ACERIS (fig. 5). 1" 5'''—2" 4'''. Black. F.-w. with a marginal row of white dots, within which is an interrupted row of large white spots. A white streak runs from the base towards the inner row of spots. At the extremity of this are one or two triangular white spots. H.-w. with a broad white band across the centre, and a *narrower one towards the hind margin*. VI.

Larva reddish brown, with a pale flesh-coloured subdorsal line, and several short oblique ones beneath it; nearly naked, but with two spines behind the head, and an anal horn like a *Sphinx*. (Horsfield and Moore).

*N. LUCILLA. 1" 8'''—2". Black. F.-w. with an interrupted row of white spots across the centre; a white basal streak, at the extremity of which is one large and one small white spot. H.-w. with *one broad central white band*. VI—VII.

Larva reddish brown, with a yellow lateral stripe; each segment with a darker transverse oblique streak. Two spines on the third, fifth, and eleventh segments. (Freyer). On *Spiræa salicifolia*. VII.

Genus 8. LIMENITIS.

Antennæ long and moderately thick; hind margin of the fore wings more or less rounded; abdominal groove well marked. Species about the middle size.

**L. SIBYLLA*. 1" 3'''—2" 5'''. *Brownish black*, with a row of more or less confluent white spots across all the wings. F.-w. with an *indistinct* whitish disc. spot, and three white dots near the tip. VI—VII.

Larva green, with rust-coloured hairy tubercles and a white lateral line; belly and prolegs paler; head pale red. (V.G.) On honeysuckle. V.

**L. CAMILLA*. 1" 7'''—2" 3'''. *Bluish black*; all the wings with a marginal row of *pale blue dots*. F.-w. with a *very distinct* white disc. spot, and a white spot near the tip; between these runs a row of about four white spots. H.-w. with a row of hardly confluent spots across the centre. VI—VIII.

Larva green; belly, legs, and head red; tubercles large, green, red at the tip. (V.G.) On honeysuckle. IV—V. VII.

Genus 9. NYMPHALIS.

Very close to *Limenitis*; but the antennæ are thicker, and the whole insect is more robustly made. The hind margin of the fore wings is nearly straight. The only species is of large size.

**N. POPULI*. 2" 6'''—2" 10'''. Black. F.-w. with a more or less distinct row of white spots on the centre. A white spot on the costa near the base, and towards the tip some white spots and a red line. H.-w. (except in var. *Tremulæ*) with a central white band, and a marginal row of red lunules. VII.

Larva yellowish green; the first four segments pale reddish violet; two white lunules on the back of the fifth segment. Spines longest on the front segments; head red, sides black, legs red. (V.G.) On *Populus alba* and *tremula*. V.

This splendid species has the habits of *Apatura Iris*.

Sub-family IV. APATURIDES.

Eyes naked; body and antennæ thick; hind margin of the fore wings concave. Larva slug shaped, with horns on the head.

Genus 10. APATURA.

Hind margin of the fore wings only slightly concave; hind wings slightly dentated, without tails. Larva with two horns on the head.

*A. IRIS. 2" 1"—3" 3". Brown. ♂ shot with brilliant purplish blue, except the hind margins, which are light brown. F.-w. with several irregular white spots; h.-w. with a white band (except in var. *Beroe*) and a large black spot in a red ring near the anal angle. VI—VII.

Larva yellowish green with several oblique yellowish lines; head flat, angulated, with two forked green spines bordered with yellow. (V.G.) On poplar, aspen, and sallow. V—VI.

*A. ILIA. 1" 8"—2" 6". The type is very close to *Iris*, but has always a black spot in a red ring near the anal angle of the f.-w. Constant varieties occur with yellow instead of white markings (*Clytie*), or with the ground colour entirely yellow, or the ocellated spot of the h.-w. absent. (*Metis*). VI—VII.

Larva dull yellowish green with several oblique yellowish lines; head angular, with two long spines green bordered with yellow, and forked at the tip; legs green. (V.G.) On several species of poplar and sallow. V—VI.

Genus 11. CHARAXES.

Hind margin of the fore wings very deeply concave; hind wings dentated with two rather long tails. Larva with four horns on the head.

*C. JASIUS (fig. 6, u. s.) 2" 7"—3" 3". Brown with a reddish tinge; hind margins broadly yellow, nearly

orange towards the tip of f.-w., shading off into yellowish green at the anal angle of the h.-w. F.-w. with the costa yellowish red, and with a marginal row of orange spots within the border; sometimes represented on the h.-w. by a spot on the costa. H.-w. generally with a marginal row of four bluish spots near the anal angle. V—VI. IX.

Larva yellowish green, with a yellow lateral line and two yellowish green ocellated spots with blue pupils on the seventh and ninth segments; head green with four spiny yellowish horns, reddish at the tip and on the outside. (V.G.) On *Arbutus unoda*. V—VIII.

Sub-family V. HIPPARCHIIDES.

Wings rounded, entire, or scalloped, with a variable number of ocellated marginal spots. Larva pisciform, attenuated behind, the tail ending in a small fork. Body without spines, generally pubescent; the head more or less rounded, and sometimes heart shaped.

This great sub-family alone comprises very nearly a third of the whole number of European RHOPALOCERA.

A. Eyes hairy. 13. LASIOMMATA.

AA. Eyes not hairy.

B. Wings marbled with black and white. 12. MELANAGRIA.

BB. Wings not marbled with black and white.

C. None of the veins of the f.-w. much dilated at the base.

D. Wings brown. 18. EREBIA.

DD. Wings brownish tawny. 17. CHIONOBAS.

CC. Two or three of the veins of the f.-w. conspicuously dilated at the base.

E. H.-w. more or less denticulated. 14. HIPPARCHIA.

EE. H.-w. not denticulated.

F. U. s. h.-w. with white veins or spots. 15. TRIPHYSA.

FF. U. s. h.-w. with no white veins or spots. 16. CENONYMPHA.

Genus 12. MELANAGRIA.

Antennæ long; club slender and gradually formed; hind wings dentated; front legs exceedingly small; ground colour white, more or less marbled with black.

The ocellated marginal spots usual in this genus are not unfrequently wanting in all the species.

A. Marginal black line of h.-w. single.

B. Central band of u. s. h.-w. uninterrupted.

C. Wings black at the base.

D. Dark markings reddish at their edges. *M. Teneates*.

DD. Dark markings not reddish. *M. Larissa*.

CC. Wings white at the base. *M. Hylata*.

BB. Central band of u. s. h.-w. interrupted.

E. Fore wings distinctly black at base. *M. Galathea*.

EE. Fore wings not distinctly black at base.

F. Hind margins black. *M. Lachesis*.

FF. Hind margins with simply an indented black line. *M. Clotho*.

AA. Marginal black line of h.-w. double.

G. Veins of the u. s. reddish. *M. Psyche* and *M. Pherusa*.

GG. Veins of the u. s. not reddish.

H. Hind margin of f.-w. only slightly marked with black. *M. Arge*.

HH. Hind margin of f.-w. with extensive black markings. *M. Thetis*.

**M. GALATHEA*. 1" 10''' — 2" 3'''. Creamy white marbled with black; base black; hind margins black, enclosing a row of white lunules on all the wings. Costa of f.-w. with a large square black spot in the middle, never rounded or concave. U. s. h.-w. white in ♂, pale yellow in ♀, with a marginal row of black spots, and a yellowish grey band across the centre, which is never interrupted in the middle. VI—VIII.

Larva yellowish green, with darker dorsal and lateral streaks. (We). On *Phleum pratense* and other grasses. IV—V.

*M. LACHESIS. 2" 4". F.-w. white, slightly greyish at the base; a semi-circular spot on the costa, touching a large rectangular one, which is placed in the centre of the f.-w. All the hind margins black with many white spots, especially towards the tips of f.-w. U. s. h.-w. with a marginal row of five black eyes with white pupils, and an interrupted yellowish grey band across the centre. V—VI.

LARVA UNKNOWN.

†M. TENEATES. 2" 2". Very similar to *Arge*, but the f.-w. are blacker at the hind margin, and the eyes of the h.-w. are placed on a more or less distinct black band. U. s. yellowish, the dark markings of the upper side reddish at their edges; the ocellated spots, though nearly obliterated, have blue pupils. (M.) VII.

LARVA UNKNOWN.

*M. LARISSA. 1" 7"—2". F.-w. creamy white, the base of all the wings broadly dusky; hind margins black with rows of white spots, besides several irregular ones. In the black band of the h.-w. are some rather indistinct white rings, each enclosing a black ring with a blue or white pupil. On the centre of the costa of the f.-w. are two large confluent black spots, nearly square, forming a sort of right angle. U. s. h.-w. with an uninterrupted central band of white spots edged on both sides with black, and five marginal eyes. VI.

LARVA UNKNOWN.

†M. HYLATA. 2" 2". Wings white, not black at base, sometimes with a yellow tinge; black border very broad, the white spots in it indistinct, except at the tip of the f.-w., where there are three. Towards the hind margin of the h.-w. are from two to five indistinct eyes;

but the innermost has always one pupil above, and a double one on the u. s. U. s. very similar to *Lachesis*, but with the central band of the h.-w. uninterrupted. (M.) VI.

LARVA UNKNOWN.

*M. CLOTHO. 1" 11'''—2" 3'''. F.-w. white, clouded with dusky at the base; the nervures black. The triangular black costal blotch joins two others, and the three together reach across the wing. Hind margin with an indented black line enclosing white spots. H.-w. white with a large dusky basal blotch, containing a white spot which fills up a great portion of it. The hind margin with a very narrow indented black line, enclosing white spots; within this is an interrupted row of five white eyes with black rings and pupils. U. s. f.-w. white, yellowish at the hind margin; the markings similar to those on the upper side, but less distinct. H.-w. similar to *Galathea* ♀. VI—VII.

LARVA UNKNOWN.

*M. PSYCHE. 2"—2" 3'''. Wings white edged with black, with a marginal row of white spots and several others near the tip of f.-w., where the black border is widest; base dusky. A very large black spot in the centre of the costa of the f.-w., enclosing one or two white spots. A black spot near the outside of the costa of the h.-w., meeting a similar one on the f.-w. Three indistinct black eyes, *with white pupils* near the anal angle of the h.-w., surrounded with dusky. U. s. f.-w. similar to the upper side, but the nervures are reddish at the tip and along the hind margin. H.-w. similarly marked to the upper side; but all the nervures, and the markings, which are black above, are *broadly reddish*. Five marginal eyes are indistinctly visible, being reddish with blue pupils, and enclosed in yellowish rings. VI—VII.

LARVA UNKNOWN.

M. PHERUSA. 1" 10"—2". Very similar to *Arge*, but darker at the base, and with the black border of f.-w. generally extending quite to the anal angle; the eyes of the h.-w. are very slightly ocellated. U. s. h.-w. very similar to *Psyche*, but the nervures are *pale reddish brown*, and the eyes are *smaller* and *less confluent*. VI.

LARVA UNKNOWN.

*M. ARGE. 1" 9"—2". All the wings black at the base; f.-w. white; hind margin black with numerous white spots; a large blotch near the centre of the costa, and a smaller one between that and the base. H.-w. white with an inner indented marginal line enclosing white spots; within these are five black eyes, scarcely ocellated. U. s. white with markings similar to those on the upper side; f.-w. with a red spot near the tip; h.-w. with a white central band, tinged with reddish and edged by two black lines; marginal eyes red. VI.

LARVA UNKNOWN.

M. THETIS. 1" 11". Wings white; f.-w. with the hind margins black, with small white dots, and a row of much larger spots enclosed by the costal blotch and its branches. Between the costal blotch and the base is a black streak meeting a dusky basal blotch (another branch of which runs along the hind margin) at a very acute angle. H.-w. with a black border having a row of marginal dots, and almost obsolete black eyes with white pupils. Towards the tip of the h.-w. this is interrupted by two large parallel white spots. In the centre of the h.-w. is a dusky streak with white spots, running out round the disc. cell, forming a rather acute angle; the veins of all the wings black. U. s. f.-w. with a black marginal line; the central black markings represented, but narrower than above. The white marginal spots are very large; there is a red eye with white pupil at the tip. H.-w. with distinct black lines, the angulated discal lines represented; hind margin with an

indented black line enclosing white spots; the five marginal eyes reddish with white pupils, enclosed in black and yellow rings. IV—VI.

LARVA UNKNOWN.

Genus 13. LASIOMMATA.

Eyes hairy; antennæ straight, club pyriform; wings, especially the hind wings, more or less denticulated.

A. More than one eye on the f.-w. *L. Dejanira*.

AA. Only one eye at the tip of the f.-w.

B. Eyes of u. s. h.-w. simple.

C. Hind margin of u. s. h.-w. purplish. *L. Ægeria*.

CC. Hind margin of u. s. h.-w. not purplish. *L. Roxelana* and *L. Clymene*.

BB. Eyes of the u. s. h.-w. enclosed by several rings.

D. Eye at tip of f.-w. with one pupil. *L. Hiera* and *L. Megæra*.

DD. Eye at tip of f.-w. bi-pupilled. *L. Mæra*.

**L. ROXELANA*. 1" 11"—2" 3". Light brown; f.-w. with an indistinct black spot near the tip and a large fulvous blotch in the centre, and in the ♀ some yellowish spots on the costa; h.-w. with or without a pale marginal line. Five black marginal eyes in fulvous rings with white pupils. U. s. f.-w. similar to the upper side, but the black spot is distinctly ocellated; h.-w. brown with a row of five large black eyes with white pupils, in yellow rings, and two others which are only rudimentary. The spot at the anal angle has two white pupils. VI.

LARVA UNKNOWN.

**L. CLYMENE*. 1" 8"—1" 10". Very similar to *Roxelana*, but the spots on the upper side are not ocellated. U. s. h.-w. with a continuous row of seven small black dots in fulvous rings. VI.

LARVA UNKNOWN.

**L. MÆRA*. 1" 8". ♂ f.-w. brown with a broad fulvous streak, divided by brown veins, near the hind margin, and a few obscure fulvous blotches between this and the base. Towards the tip is a large black eye with two white pupils. H.-w. brown, with a fulvous marginal band enclosing two black eyes with white pupils. ♀ f.-w. fulvous; costa, base, and hind margin brown. Between the base and the eye at the tip are two brownish streaks—one short, the other reaching across the wing. H.-w. as in ♂, but tinged with fulvous towards the base. U. s. f.-w. similar to the upper side in ♀. H.-w. grey with a marginal row of six black eyes with white pupils, enclosed by several black and yellow rings; the eye at the anal angle is double and very small. V—VII.

Larva clear green with a brown dorsal line mixed with whitish, and a whitish lateral streak; head and legs green. (V.G.) On grass. IV—VI.

L. HIERA. 1" 6"—1" 7". Wings *dark brown*; f.-w. fulvous towards the tip, the fulvous blotch enclosing a black eye with one white pupil, sometimes also a small black spot beneath it. H.-w. with an indistinct fulvous marginal band enclosing three black eyes with white pupils. U. s. f.-w. with a large fulvous blotch; the spots of the upper side are present, enclosed in yellow rings. H.-w. dark grey with marginal eyes as in *Mæra*, but very small and rather indistinct. V. VIII.

LARVA UNDESCRIBED.

**L. MEGÆRA*. 1" 9"—2". F.-w. *fulvous*, with several brown lines varying in width running across them; a black eye with white pupil near the tip; base and hind margin brown. H.-w. brown with two marginal fulvous streaks; the outermost is the broadest, and contains three black eyes with white pupils, and a fourth at the anal angle very small and indistinct. U. s. f.-w. similar to the upper side, but the eye is surrounded by a whitish yellow ring; h.-w. brownish grey with six small black

eyes, with white pupils, each enclosed by one brown and one yellowish ring. The eye nearest the anal angle is bi-pupilled. V—IX.

Larva green with three very faint pale dorsal lines and a more distinct pale lateral line. (St.) On grass. III—IV. VI—VII.

**L. ÆGERIA*. 1" 8'''—2". F.-w. brown with a black eye with a white pupil near the tip, and numerous spots, which vary from whitish yellow to yellowish fulvous (in var. *Meone* and var. *Xiphia*). H.-w. with three black eyes with white pupils, enclosed by yellowish or reddish rings, and three white spots arranged in a triangular form at the tip. U. s. f.-w. similar to the upper side, but the spots are larger. H.-w. with a variable number of small reddish brown eyes with white pupils, only two or three of which are at all distinct. This wing is varied with grey and purplish or reddish. The hind margin is of these last colours, as is also a central band, the outside of which is marked with two or three pale spots. IV—VIII.

Larva green, with white lateral lines and a forked tail. (We.) On grass, especially *Triticum repens*. III. V.—VI. IX—X.

**L. DEJANIRA*. 1" 8'''—2" 1'''. All the wings pale brown with a marginal row of large black spots in yellow rings, five on f.-w. and four on h.-w. U. s. paler with a white marginal band within the eyes. VI.

Larva clear green with three dorsal lines and two more conspicuous lateral ones, the latter bordered beneath by a whitish line; head and legs yellowish; prolegs green. (V.G.) On *Lolium perenne*. IV.

Genus 14. HIPPARCHIA.

Antennæ slender; club variable, sometimes long and slender, sometimes short and broad; wings, especially the hind wings, more or less denticulated.

- A. Anal angle of h.-w. rounded and entire.
- B. Wings uniform dark brown or black; f.-w. with no distinct pale bands.
- C. Eyes black, not ocellated above.
 - D. Fringes white. *H. Fidia*.
 - DD. Fringes grey. *H. Statilinus*.
- CC. Eyes black, or black with blue or bluish-white pupils.
 - E. F.-w. with only one blue spot. *H. Actæa* ♂.
 - EE. F.-w. with two spots.
 - F. F.-w. with no white dots. *H. Phædra*.
 - FF. F.-w. with white dots.
 - G. A spot at anal angle of h.-w. above or below. *H. Virbius* and *H. Cordula*.
 - GG. No spot at anal angle of h.-w. *H. Actæa* ♀.
- BB. Wings brown, with a distinct pale band varying from white to fulvous near the hind margin of all the wings.
 - H. Marginal band white.
 - I. Marginal band slightly edged with orange. *H. Anthelea* ♂.
 - II. Band not edged with orange.
 - J. Spots of f.-w. not ocellated beneath. *H. Anthe*.
 - JJ. Spots of f.-w. ocellated beneath.
 - K. The eye at tip of f.-w. not completely surrounded with white. *H. Briseis*.
 - KK. The eye completely surrounded with white.
 - L. Marginal band perfectly white. *H. Proserpina*.
 - LL. Marginal band dirty white. *H. Hermione* and *H. Alcyone*.
 - HH. Marginal band bright flame colour. *H. Iolaus*.
 - HHH. Marginal band yellow or fulvous.

- M. Nervures of u. s. h.-w. white or whitish.
 N. F.-w. with two eyes. *H. Autonoe* and *H. Agave*.
 NN. F.-w. with one eye. *H. Arethusa*.
 MM. Nervures not white.
 O. F.-w. with a black basal streak. *H. Anthenea* ♀
 OO. F.-w. with no basal streak.
 P. H.-w. with two white dots at anal angle.
H. Pelopea.
 PP. H.-w. with a very small black eye at anal angle.
 Q. U. s. h.-w. varied with grey. *H. Beroe*.
 QQ. U. s. h.-w. pale brown. *H. Briseis* var. *Pirata*.
 QQQ. U. s. h.-w. with distinct white markings.
H. Semele.
 AA. Anal angle of h.-w. emarginate or incised.
 R. Wings with no fulvous markings. *H. Hyperanthus*.
 RR. Wings with fulvous markings.
 S. U. s. h.-w. with no dots or eyes.
 T. U. s. h.-w. with white markings.
 U. H.-w. uniform brown. *H. Narica*.
 UU. H.-w. fulvous, bordered with brown. *H. Ida*.
 TT. U. s. h.-w. with no white markings.
H. Lycaon and *H. Nurag*.
 SS. U. s. h.-w. with dots or eyes.
 V. H.-w. with black spots above.
H. Pasiphæ.
 W. U. s. h.-w. with a pale spot on the costa. *H. Tithonius*.
 WW. U. s. h.-w. with no pale spot on the costa.
 X. U. s. h.-w. with the spots near the anal angle ocellated.
H. Janiroides.
 XX. U. s. h.-w. with no ocellated spots near the anal angle.
H. Janira.

*H. PROSERPINA. 2" 3" — 2" 10". F.-w. reddish brown with a large black eye at the tip, having a square white spot on each side and below it. On the hinder part of the f.-w. is a band of four white spots, the second sometimes bearing a brown eye; h.-w. reddish brown with a broad white band. U. s. f.-w. paler than above; the white spots are confluent, and surround the eye, except on the costal side; nearer the base is a black blotch on the costa between two white ones. H.-w. varied with grey, having a small black eye near the anal angle, and a white streak running from the costa near the base; the central white band is represented. VI—VIII.

Larva livid grey, irregularly striped with reddish; dorsal and sub-dorsal lines greenish black; lateral line yellowish. (V.G.) On various grasses. V.

*H. HERMIONE. 2" 3" — 2" 7". Dark reddish brown, with dull white marginal streaks. Towards the tip of f.-w. is a black eye with a white pupil, and beneath this is a smaller black spot. H.-w. with a *small black eye at the anal angle*. U. s. h.-w. grey with a much suffused white marginal streak. VII—VIII.

Larva reddish grey, with a brown double dorsal streak, and a lateral streak of ashy grey, bordered with a black and white line. (V.G.) On various grasses. V.

*H. ALCYONE. 2" — 2" 2". Very like *Hermione*, of which some consider it a mere variety, but *darker*, and with a *narrower* marginal band. H.-w. with *no eye* at the anal angle. U. s. h.-w. dark brown with a very distinct central white band. VII—VIII.

LARVA UNDESCRIBED.

*H. BRISEIS. 1" 9" — 2" 6". F.-w. dark brown; costa yellowish; a white or yellow marginal band divided into distinct spots by the nervures, the spot at the tip and the fourth from it having a more or less distinct black eye with a white pupil. H.-w. with a continuous

and tolerably well defined white or yellow band across the centre. U. s. (type) f.-w. white; base, tip, and hind margin dusky; the eye at the tip well marked, and between this and the base are two black costal dashes. H.-w. black at base; a yellowish grey band across the centre; hind margin dusky. U. s. (yellow var. *Pirata*) f.-w. with both the eyes and the yellow marginal band well marked. Tip and hind margin dusky, the lower portion of the latter marked with black. A large black lunule surrounded by two white ones in the centre of the dusky basal portion of the wing, on the costa. H.-w. varied with pale brown, but without distinct markings. VII—VIII.

Larva yellowish grey, with darker dorsal and sub-dorsal lines and two paler lateral lines; head reddish grey. (Freyer.) On grass. V—VI.

*H. ANTHE. 2" 5". Brown; f.-w. with a black spot at tip, having a large square white blotch on each side, and a smaller one below it; a marginal streak of white on the hinder part of the wing, bearing another large black spot. H.-w. with a suffused white band; the spots are neither ocellated above nor below. There is a variety of this species also with yellow bands, corresponding to *H. Briseis* var. *Pirata*. VII.

LARVA UNKNOWN.

*H. ANTONOE. 1" 10"—2". Dark brown; a black eye with *pale blue pupil* at each angle of f.-w. H.-w. sometimes with a smaller one at the anal angle. Faint traces of a yellowish band on all the wings. U. s. f.-w. more or less pale yellow; h.-w. with the veins and some transverse lines whitish. VII.

LARVA UNKNOWN.

*H. SEMELE. 1" 9"—2" 9". F.-w. brown; a black eye near the tip, with a square yellow blotch on each side in the ♀; a second near the hinder angle surrounded

by a large yellow ring. In the ♂ the pale markings are much more obscure. H.-w. with a tawny band, and a small black eye at the anal angle. U. s. f.-w. costa and hind margin grey; a yellow marginal band with the two eyes; base reddish. H.-w. ♂ dark brown with a distinct white transverse band, and a white dot nearer the base; ♀ irregularly shaded with brown and white. VII—IX.

Larva greenish grey, with five blackish longitudinal lines, the dorsal line darkest. (Marloy.) On grass. IV—V.

*H. ANTHELEA. 1" 10". ♂ pale brown with a large black basal streak and a broad white marginal band slightly edged with orange. F.-w. with a black eye at the tip and another about the centre of the band, and a small one near the anal angle of h.-w. The ♀ has the band fulvous and two white dots between the eyes. VI.

LARVA UNKNOWN.

H. PELOPEA. 1" 11". Brown, with a yellowish or fulvous marginal band, most distinct on h.-w. Near each angle of the f.-w. is a large black eye with a very small white pupil, placed in the centre of the band. H.-w. with two white dots near the anal angle, the innermost surrounded with black. U. s. f.-w. pale fulvous, with some greyish costal and basal markings; the two white dots between the eyes, which are very small above, considerably larger. H.-w. grey, varied with brown; hind margin purplish brown; a black dot near the anal angle.

LARVA UNKNOWN.

*H. AGAVE. 1" 8". F.-w. *pale* brown, with a yellow band near the hind margin containing two large black eyes, with *very small white pupils* at each angle of the f.-w., and a very small one near the anal angle of the h.-w. U. s. f.-w. pale yellow, with a few short black costal streaks; the eyes well represented. H.-w. grey,

the veins whiter, and one or two obscure white transverse lines. VI.

LARVA UNKNOWN.

*H. BEROE. 2". Pale brown, with an ill-defined and very faint yellowish band; a black eye at tip of f.-w., and a black spot about the centre of the hind margin. U. s. f.-w. very pale yellowish, hind margin darker; two short blackish costal streaks, the eyes present. H.-w. slaty grey at base, the marginal part varied with different shades of grey.

LARVA UNKNOWN.

*H. IOLAUS. 1" 8". Black; a black eye with white pupil at tip of f.-w., and another at the anal angle of h.-w. A broad transverse flame-coloured band, not divided into spots by the veins, between the eyes of the f.-w. and on the h.-w. U. s. f.-w. similar to the upper side, but the band is much broader and redder; h.-w. dark brown, with a very distinct white transverse band. VII.

LARVA UNKNOWN.

*H. ARETHUSA. 1" 5"—1" 11". Dark brown, with a more or less distinct transverse fulvous band, divided into spots by the veins; a black spot at tip of f.-w., and at the anal angle of h.-w. U. s. f.-w. yellowish fulvous; costa and hind margin blackish; the eye at the tip ocellated. Between this and the base are numerous short costal lines, the outermost reaching across the wing. H.-w. dark grey, with a marginal row of black spots, and a whitish band within them; the veins whitish. VIII.

LARVA UNKNOWN.

*H. STATILINUS. 1" 6"—2" 1". ♂ dark brown with a black spot at each angle of the f.-w., separated by two white dots. H.-w. with a black spot at the anal angle. U. s. f.-w. with the black spots in yellow rings, the apical one has a white pupil; a short white streak

runs from the costa within the first eye. H.-w. brown with a central white band. ♀ yellowish brown, the eyes in more or less distinct yellow rings; a marginal row of yellow spots on the h.-w.; u. s. f.-w. as in the ♂; h.-w. with the transverse band pale grey, sometimes hardly perceptible. VIII.

LARVA UNKNOWN.

*H. FIDIA. 1" 8'''—2" 1'''. Very similar above to the ♂ of *Statilinus*, but the white spots are larger, and there are sometimes two additional ones on the f.-w. nearer the base than the black ones; all the fringes very white. U. s. f.-w. pale brown, the eyes in yellow rings and with white pupils. Within these runs an interrupted white band, and nearer the base are two short black costal streaks. Between the first eye and the tip are one or two whitish blotches. H.-w. white; a black band runs from the costa half across the wing near the base; hind margin varied with reddish brown. Across the centre of the wing runs a reddish brown band, partially bordered with black, and very strongly angulated outwards. VII.

Larva yellow, with a black dorsal and three lateral streaks. (Marloy.) On grass? III—V.

*H. PHAEDRA. 1" 9'''—2" 3'''. Dark brown; f.-w. with two large black eyes with blue pupils; h.-w. with a small one at the anal angle. U. s. paler; the eyes of the f.-w. in yellow rings. H.-w. with an indistinct bluish streak. VII—VIII.

Larva ashy grey or pale reddish, with a black dorsal line, and two bluish grey lateral lines. (V.G.) On *Avena elatior*. VI.

*H. CORDULA. 2"—2" 6'''. ♂ dark brown; a black eye with a pale blue pupil at each angle of the f.-w., and two pale blue spots between them. H.-w. with from one to three black spots at the anal angle. U. s. f.-w. with

the apical eye in a yellow ring, otherwise similar to the upper side; h.-w. dark grey, the veins whitish. ♀ with the eyes in yellow rings, and a yellowish band on the h.-w. U. s. f.-w. almost entirely yellowish fulvous; h.-w. grey with a lighter central band, *and the veins whitish*. VI—VII.

LARVA UNKNOWN.

*H. ACTÆA. 1" 8"—2". Dark brown. ♂ with a pale blue spot at tip of f.-w.; ♀ often with one at each angle of f.-w. in black rings; the apical one in an outer yellow ring. Between the eyes are two white spots. U. s. ♂ f.-w. dark brown, with a black apical eye with a blue pupil, in a yellow ring; below this are two white spots and one black one. ♀ f.-w. fulvous, especially at the hind margin, with a large black apical eye with two white pupils, below which is a white spot and a black one, sometimes ocellated. H.-w. in both sexes dark grey with two white bands, and a black spot at the anal angle; sometimes a smaller eye near the tip of the h.-w. VI—VII.

LARVA UNKNOWN.

†H. VIRBIUS. 1" 11". ♂ brown; f.-w. with two black eyes with white pupils; there are two white dots between the eyes. ♀ paler; the eyes in yellow rings. U. s. f.-w. brown in ♂, fulvous in ♀. H.-w. dark brown in ♂, hind margin varied with bluish grey; two dots at the anal angle. H.-w. unicolorous yellowish brown in ♀ with the dots, which in this sex are faintly visible above. (H.S.)

LARVA UNKNOWN.

*H. LYCAON. 1" 5"—1" 6". ♂ *dull brown*; f.-w. *slightly tinged with fulvous*; a black apical spot, and a black streak running towards it from the inner margin, starting at about one third of the breadth of the wing from the base. U. s. f.-w. fulvous, the apical eye with

a white pupil; h.-w. brown. ♀ f.-w. *brown*, with a black spot surrounded with fulvous at each angle; h.-w. brown. U. s. f.-w. pale yellowish, the apical spot ocellated; h.-w. whitish grey. V—VI.

Larva green with a large lateral streak, varied with yellow and red, above which is a white line. (V.G.) On various grasses. V—VI.

H. NARICA. 1" 8". F.-w. yellowish fulvous; costa and hind and inner margins brown; a black spot at tip, and a second in ♀ (V.G.) near the inner margin. A blackish basal band wanting in ♀ reaches half across the fulvous part of the wing; h.-w. brown. U. s. f.-w. similar, but the eye is ocellated and surrounded with whitish yellow; basal streak very faint. H.-w. grey, with a narrow whitish central band and other whitish markings; the veins narrowly white. VI.

LARVA UNKNOWN.

*H. JANIRA. 1" 7"—2" 1". ♂ dull brown, with a black eye with white pupil at tip, slightly surrounded with fulvous. U. s. f.-w. pale fulvous; h.-w. brown. A brownish red line runs across the centre of all the wings, outside which the tints are lighter. ♀ differs in having more or less fulvous spread over the f.-w., and sometimes (especially in var. *Hispulla*) also on the h.-w. U. s. f.-w. as in ♂; h.-w. pale brown, with a more or less distinct paler band between the central line and the base. There are generally spots varying in number and distinctness on the u. s. h.-w. VI—VIII.

Larva green, with a darker dorsal line and a whitish lateral one. (V.G.) On *Poa pratensis* and other grasses. IV—V.

H. JANIROIDES. 1" 8"—1" 10". ♂ f.-w. brown, a black eye at the tip, narrowly surrounded with fulvous, and a row of fulvous spots between the eye and the inner margin; h.-w. brown, the outer portion with a broad fulvous band.

♀ with a bi-pupilled eye; f.-w. fulvous, except costa and hind margin, which are brown, the marginal portion of the band marked off by a brown line; h.-w. as in ♂, but with a broader band edged internally by a brown line. U. s. f.-w. as in ♀ above, but the fulvous not divided by brown veins, only the brown line being faintly marked; h.-w. grey, hind margin and a well-defined central band darker. In the pinkish grey part between these two dark portions are four yellow eyes with black pupils.

LARVA UNKNOWN.

H. NURAG. 1" 4". ♂ brown; f.-w. with a large blackish streak running from the inner margin near the base; the central outer part of the wing with a *fulvous blotch*; a small black eye, with white pupil in a fulvous ring at the apical corner of the fulvous blotch. H.-w. with a small square fulvous blotch in the centre of the outer portion. ♀ (Ghiliani) *ochre yellow*, with a rather narrow marginal fulvous band on all the wings; the eye on f.-w. as in ♂; the veins of the f.-w. and the base of the h.-w. dark brownish red. U. s. f.-w. fulvous; costa, hind margin, and anal angle brown; the transverse line across the fulvous portion hardly perceptible. H.-w. uniform brown.

LARVA UNKNOWN.

*H. IDA. 1" 1"—1" 5". ♂ f.-w. brown; the whole of the centre fulvous; a black eye with two white pupils at the tip; on the hind margin is a square brown blotch, running up into the fulvous portion. H.-w. brown; the centre fulvous. ♀ similar, but without the blotch. U. s. f.-w. as in the ♀ above; h.-w. pale grey, with a whitish central band, and a whitish blotch on the costa. VI.

Larva reddish grey; dorsal line blackish; lateral lines red and whitish. (V.G.) On *Triticum caespitosum*. IV—V.

*H. TITHONIUS. 1" 4"—1" 7". Very close to *Ida*; but the brown blotch of the ♂ is triangular, sometimes

very large, reaching half way across the f.-w. U. s. f.-w. reddish brown, with a darker band and blotch than *Ida*, and having three or four white dots in reddish brown rings. VII—VIII.

Larva greenish or grey, with a dark dorsal line and two pale lateral lines; head reddish (Sepp. quoted by St). On *Poa annua* and other grasses. V—VI.

*H. PASIPHAE. 1" 4"—1" 8". ♂ brown. F.-w. with a black apical eye, with two white pupils; hind margin fulvous, this colour running towards the base parallel with the costa. H.-w. with a broad fulvous marginal band, with three black spots. ♀ similar, but with the f.-w. fulvous; h.-w. with four spots, two ocellated. U. s. h.-w. brown, with a central yellowish white streak and five marginal eyes. VI—VII.

LARVA UNKNOWN.

*H. HYPERANTHUS. 1" 7"—1" 10". Dark blackish brown (♀ paler), with a variable number of black marginal spots in yellow rings; those on the h.-w. with white pupils in the ♀. U. s. paler; the spots generally very distinct, and having white pupil. Fringes white. VI—VII.

Larva reddish grey, with an interrupted brown dorsal line; a yellowish white lateral one, and sometimes a line paler than the ground colour between the two. (V.G.) On *Poa annua* and other grasses. V—VI.

Genus 15. TRIPHYSA.

Wings entire; the three nervures of the fore wings much dilated at the base in the ♂, but only the two first in the ♀; club of the antennæ round and flat.

*T. PHRYNE. 1" 1"—1" 3". ♂ dull chocolate brown; hind margins whitish. ♀ dirty white. A black dot near the anal angle of h.-w. in both sexes. U. s. brown,

with the *nervures* and a *marginal line* on all the wings *white*, and *marginal rows* of *black eyes*, with white pupils. IV—V.

LARVA UNKNOWN.

†T. SUNBECCA. 1" 5". White, semi-transparent. U. s. f.-w. white; costa, base, and tip dull greenish, spotted with white; h.-w. *dull greenish*, with two rows of white spots, the innermost the largest, and three large white spots nearer the base. All the wings with a white marginal line. (H.S.)

LARVA UNKNOWN.

Herrich Schaffer is in doubt whether to place this abnormal species among the smaller *Hipparchiæ*, or in the genus *Anthocharis*. Staudinger, who has not seen the species, places it doubtfully in the genus *Triphysa*, and I have followed him. Eversmann, the original describer, calls it an *Hipparchia*.

Genus 16. CÆNONYMPHA.

Antennæ slender; club long and fusiform; wings entire; all the three nervures of the fore wings dilated at the base.

A. U. s. h.-w. with no silvery or brown line before the hind margin.

B. U. s. h.-w. with six very distinct eyes. *C. Davus*.

BB. U. s. h.-w. without eyes, or with a variable number of small or indistinct ones.

C. H.-w. nearly always with a white blotch above. *C. Typhon*.

CC. H.-w. never with a white blotch above. *C. Pamphilus*.

AA. U. s. h.-w. with a silvery or brown line before the hind margin.

- D. U. s. h.-w. with the eyes in yellow rings.
- E. U. s. h.-w. with the basal half brown, regularly dentated. *C. Œdipus*.
- EE. U. s. h.-w. with the basal half irregularly bounded.
- F. Basal half of u. s. h.-w. bounded with brown.
- G. White band of u. s. h.-w. interrupted. *C. Corinna*.
- GG. White band entire. *C. Dorus* and *C. Thyrsis*.
- FF. Basal half of u. s. h.-w. not bounded with brown.
- H. Wings unicolorous yellowish tawny. *C. Amaryllis*.
- HH. Wings partly brown and partly fulvous. *C. Arcanius*.
- HHH. Wings uniform blackish brown. *C. Hero*.
- HHHH. Wings dull tawny or brown.
- I. All the wings with an orange sub-terminal line. *C. Mandane*.
- II. Only the h.-w. with a more or less developed orange sub-terminal line. *C. Iphis*.
- EEE. The basal colour of the u. s. h.-w. extending to the eyes. *C. Leander*.
- DD. Eyes of the u. s. h.-w. without yellow rings, and placed in the middle of the white band. *C. Philea*.

*C. ŒDIPUS. 1" 3'''—1" 7'''. Uniform brown, sometimes shot with purple, and sometimes having more or less distinct marginal black eyes, with white pupils, in pale yellow rings. U. s. brown, with a similar marginal row of eyes. VI.

LARVA UNKNOWN.

*C. HERO. 1" 1'''—1" 2'''. Dull brown, with two

marginal orange dots on the f.-w., the one nearest the tip with a black pupil. H.-w. with four marginal black spots in orange rings, the two innermost largest. U. s. f.-w. brown; hind margin orange, enclosing black dots. H.-w. brown, with a marginal row of five black eyes with blue pupils, in orange rings, bounded externally by a bluish, and internally by a white, line. V—VI.

LARVA UNKNOWN.

*C. IPHIS. 1"—1" 2". Dull brown, flushed with tawny, especially in the centre of the f.-w.; h.-w. with an orange line at the anal angle. U. s. f.-w. yellowish, with a small eye at the tip. H.-w. brown, with a marginal orange line; within this is a row of small black eyes with white pupils, in yellowish rings, and a pale central band generally interrupted and always irregular. VI—VII.

Larva green, dotted with yellow on the back, with a blackish or dark green dorsal line; head and legs green; stigmata red. (V.G.) On grasses. IV—V.

*C. MANDANE (fig. 7). 1" 3"—1" 4". F.-w. dull fulvous or tawny, shading off into brown towards the hind margins; h.-w. brown, sometimes with a few small marginal orange eyes. A narrow orange line close to the fringe on all the wings. Fringes ashy grey. U. s. f.-w. uniform dull fulvous; hind margin ashy grey, the orange line fading into it towards the tip. H.-w. brown; base greenish; the orange fringe edged internally by a silvery line, within which are three or four small eyes with silvery pupils. In the centre of the wing the pale band usual in the genus is represented by two large irregular spots. Nearer the base on the costa is another small eye with a silvery pupil.

LARVA UNKNOWN.

C. alis anticis fulvis obscurioribus; posticis fuscescentibus, subtus linea argentea; fimbriis omnibus aurantiacis.

Habitat Polish Ukraine.

I copy my original description from the "Proceedings of the Entomological Society of London for 1862," but I find this species so nearly approaches *Iphis*, that I should certainly have sunk the name *Mandane*, had not the specimens been indicated as distinct by Mr. E. Doubleday in the British Museum "Catalogue of Lepidoptera Rhopalocera," part i., first edition.

*C. ARCANUS. 1" 1'''—1" 3'''. F.-w. dull reddish; hind margin black, h.-w. dark brown, slightly shot with yellow, sometimes with a few marginal eyes. U. s. f.-w. as above, but yellower, and with a small apical eye; h.-w. pale brown, with a white central band, within which is a black costal eye in a yellow ring, with a white pupil. Hind margin reddish, with a blue marginal line and three very small eyes. VI—VII.

Larva green, with black and yellow stripes; head and legs green, stigmata reddish. (V.G.) On grasses. V.

*C. LEANDER. 1"—1" 4'''. ♂ f.-w. brown, yellowish towards the base; h.-w. brown, hind margin with an orange band at the anal angle. ♀ f.-w. yellowish, darker at the hind margin, sometimes with one or two marginal eyes; h.-w. with a band paler than in ♂, four black dots, and sometimes a black line. U. s. f.-w. yellow, hind margin dusky, an apical eye with a black dot beneath it; h.-w. greenish yellow, hind margin dusky; a marginal orange band with six eyes within it. VI.

LARVA UNKNOWN.

*C. PHILEA. 1" 1'''. Differs from *Iphis* by the u. s. h.-w., which has a distinct central white band, always continuous, of equal width throughout, in which the eyes are placed. It also has a red marginal band, and the ground colour is greener. VII.

LARVA UNKNOWN.

*C. DORUS. 1" 1'''—1" 3'''. F.-w. brown in ♂, fulvous in ♀; a black eye in a fulvous ring at tip; h.-w. brown, with the centre and a marginal line fulvous; a curved row of black eyes across the h.-w. U. s. f.-w. fulvous, hind margin with an intersecting blackish band; the eye has a white pupil, and is surrounded with whitish; a whitish band runs from the costa within the eye to the anal angle; h.-w. greenish grey at base; a central whitish band, within which is a black costal eye with a white pupil, in a yellow ring. The hind margin has first an orange then a dusky line, next to which comes an oval white blotch, between which and the central band are four or five eyes similar to the first. VII.

LARVA UNKNOWN.

*C. CORINNA. 10'''—1". Reddish fulvous, hind margins more or less brown, this colour extending along the costa of all the wings. An intersecting fulvous streak runs parallel to the hind margin of f.-w. Tip of f.-w. with a black eye. U. s. with a silvery marginal line; f.-w. fulvous, the eye with a white pupil and a yellow ring; h.-w. dull fulvous tinged with green at the base; a narrow irregular central white band with one large eye within it and three small ones on the outside. VI. VIII.

Larva green, with a darker dorsal streak varied with pale green, and three lateral lines, pale green, dark green, and yellowish respectively. (V.G.) On *Carex gynomane* and *Triticum caespitosum*. IV—V. VII—VIII.

*C. AMARYLLIS. 1" 1'''—1" 5'''. Yellowish tawny, with an indistinct row of marginal eyes, one at each angle of the f.-w. being the only ones perceptible at the first glance. U. s. f.-w. yellowish tawny, the marginal eyes distinct, with white or silvery pupils and yellow rings. H.-w. greenish; the marginal eyes, which are similar to those of the f.-w., are placed in a tawny band. Within this are faint traces of a whitish one. VI—VII.

LARVA UNKNOWN.

*C. PAMPHILUS. 1" 1'''—1" 5'''. Tawny, hind margins brown; a brown dot at tip of f.-w. U. s. f.-w. similar to the upper side, but the hind margin is paler, and the eye has a white pupil and a yellow ring; h.-w. dark brown at base, hind margin grey; two central pale bands, the innermost broad and white, the outermost pale brown, narrow, enclosing a variable number of white dots. (The South European var. *Lyllus* is intermediate between this species and the next.) V—IX.

Larva apple green, with darker dorsal and lateral stripes bordered with white. (V.G.) On *Poa annua*, *Cynosurus cristatus*, and other grasses. IV—IX.

C. THYRSIS. 1" 2'''. F.-w. fulvous, hind margin and outer half of the costa brown, a black eye at tip; h.-w. *fulvous*, hind margin brown, with a fulvous streak at anal angle; three black eyes in the outer part of the fulvous portion of h.-w. U. s. f.-w. as above, eye ocellated and a black line within it, and a pale fulvous one on the brown hind margin; h.-w. yellowish grey, with a central pale yellowish band, outside which are three small black eyes and traces of several others. A marginal stone-coloured indented line. V.

LARVA UNKNOWN.

*C. DAVUS. 1" 3'''—1" 5'''. Varies from pale tawny to dull brownish; f.-w. with from one to four more or less distinct black eyes in rings paler than the ground colour; h.-w. with from two to six. The pale vars. have traces of still paler bands within the eyes. U. s. f.-w. dull fulvous, with from two to four eyes or traces of eyes, with a straight white streak within them; h.-w. olive brown, greenish towards the base, always with six very distinct black marginal eyes with white rings and pupils, within which is a band of three large confluent white spots, the anal one sometimes nearly obliterated. VII.

Occurs at the beginning of July in low swampy places.

Much rarer than the following species, with which it never mingles. (T. Marshall.)

*C. TYPHON. 1" 2"—1" 6". Dull tawny, with a small eye at tip of f.-w., and sometimes one or two others near the hind margin; h.-w. with from one to four eyes, very small and indistinct; a white blotch between the spots and the base. U. s. f.-w. with from one to three eyes, dull tawny; costa and hind margin greenish ash; within the eyes is a white streak; h.-w. greenish, with from two to six indistinct marginal eyes. (The northern var. *Isis* is wholly without eyes beneath.) Within the eyes is a white marginal band, sometimes divided into three more or less confluent spots. VII.

Occurs from the middle to the end of July on damp mountain moors, never at a less elevation than 2000 feet (T. Marshall). Mr. Marshall informs me that Weaver's statements concerning the localities of his specimens of this and the preceding species are not to be depended on, as he accidentally mixed them.

Genus 17. CHIONOBAS.

The nervures of none of the wings much dilated, the costal nervure very slightly, the medial scarcely at all; club of the antennæ gradually formed, hardly distinct, and curved at the tip; ground colour brown, tinged with tawny. Larva entirely unknown.

A. All the eyes blind. *C. Tarpeia*.

AA. Some of the eyes ocellated.

B. U. s. h.-w. with the dark central band not sharply bounded on the basal side. *C. Aello* and *C. Œno*, var.

BB. U. s. h.-w. with the dark central band sharply bounded on both sides.

C. All the wings with a pale marginal band divided into spots on the h.-w. *C. Jutta*.

CC. The marginal band suffused, not divided into distinct spots on the h.-w. *C. Norna*.

AAA. Wings without eyes, or at most with only a few dots.

D. U. s. h.-w. with the veins white. *C. Taygete*.

DD. Veins of u. s. h.-w. not white.

E. Base brown. *C. Crambis* and *C. Ceno*.

EE. Base tinged with tawny. *C. Bore*.

*C. JUTTA. 1" 9"—1" 10". Dark brown. F.-w. with a marginal fulvous band divided into spots, enclosing about three black spots or dots on the f.-w., and one or two on the h.-w. VII.

*C. AELLO (fig. 8). 1" 7"—2". Pale brown, slightly dusted with tawny; a pale tawny marginal band, containing from two to four black spots, on the f.-w., which are sometimes ocellated; h.-w. with an eye near the anal angle of the h.-w., and sometimes also a simple spot. U. s. h.-w. with *very distinct* white veins. VII.

*C. TARPEIA. 1" 7"—1" 10". Pale tawny washed with brown, especially towards the base; hind margin dusky. F.-w. with four or five black marginal spots; h.-w. with four. V—VII.

*C. NORNA. 1" 7"—1" 10". Pale brown tinged with tawny; a fulvous marginal band containing a black spot near each angle of the f.-w., and generally one near the anal angle of the h.-w. VII.

*C. BORE. 1" 6"—1" 9". F.-w. pale greyish tawny; near the hind margin is sometimes a row of black dots. H.-w. brown, sometimes mottled with pale greyish tawny, sometimes with a tawny band near the brown hind margin, the h.-w. being slightly tinged with tawny between the band and the base. U. s. h.-w. mottled

with greyish brown, and marked with some obscure whitish lines. VII.

*C. TAYGETE. 1" 7'''—1" 8''' . F.-w. pale brown, with a slight tawny tinge; h.-w. pale brown, with a dull tawny marginal band. U. s. h.-w. grey at base. Across the centre runs a yellowish grey band edged on both sides with black lines; outside this is a broad white band, shading off towards the hind margin into yellowish grey and brown. VII.

*C. CRAMBIS. 1" 7'''—1" 9''' . Pale brown tinged with tawny; *a marginal row of white dots on h.-w.* U. s. h.-w. similar to *Taygete*, but with a purplish tinge. The pale bands are pinkish white and of equal width (about half the width of the outermost in *Taygete*), and the marginal spots of the upper side are represented beneath.

†C. CENO. 1" 10''' . Pale brown, with a tawny marginal band, much mixed with brown on the h.-w. U. s. h.-w. brown, with an angulated whitish band beyond the middle; hind margin paler. *Veins not white*, except in var. *Also*, where they are whitish. A variety of this species occurs, having an eye at tip of h.-w. and at the anal angle of h.-w. Otherwise the species shows *no traces of marginal spots.* (H. S.)

Genus 18. EREBIA.

Antennæ slender, with a rather long club. The subcostal nervure of the fore wings alone much dilated at the base. Fore wings either rounded or elongated; hind wings frequently, but not invariably, denticulated. Ground colour dark brown with reddish marginal bands containing eyes.

A. Fore wings with six eyes ocellated on both sides, of which some are nearer the base than the rest.

B. Veins of u. s. h.-w. white. *E. Afra.*

BB. U. s. h.-w. marbled, the basal portion darker.

- C. U. s. h.-w. dark brown, the eyes of the upper side more or less visible. *E. Evias.*
- CC. U. s. h.-w. clear brown, mixed with whitish, the eyes very small and hardly visible. *E. Stygne.*
- AA. Fore wings never with six eyes ocellated on both sides.
- D. U. s. h.-w. marbled, the basal half and hind margin much paler, never with eyes surrounded with red.
- E. Red band of the u. s. f.-w. suffused towards the base, not sharply bounded with darker.
- F. Veins of the u. s. f.-w. white. *E. Parmenio.*
- FF. Veins of the u. s. f.-w. not white.
- G. Wings very distinctly shot with metallic green. *E. Tyndarus.*
- GG. U. s. h.-w. with a row of white dots. *E. Arete.*
- GGG. Wings not distinctly shot with green ; u. s. h.-w. with no row of simple white dots.
- H. Eyes small, indistinctly or rarely ocellated.
- I. Marginal red band considerably suffused. *E. Mnestra.*
- II. Marginal red band slightly, if at all, suffused.
- J. F.-w. with four dots. *E. Manto.*
- JJ. F.-w. with two or three dots or eyes. *E. Gorge.*
- HH. Eyes distinctly ocellated.
- K. F.-w. with three or four eyes close together. *E. Scipio.*
- KK. F.-w. with two apical eyes, and often a third near the anal angle.
- L. U. s. h.-w. considerably varied with pale grey and white.
- M. U. s. f.-w. deep brownish red. *E. Reichlini.*

- MM. U. s. f.-w. not deep brownish red.
 N. Veins of u. s. h.-w. narrowly white. *E. Gorgone* ♀.
 NN. Veins of u. s. h.-w. sometimes broadly, but never narrowly, whitish. *E. Goante*.
 NNN. U. s. h.-w. with a yellowish band. *E. Nerine* ♀.
 LL. U. s. h.-w. not much varied with pale colours.
 O. Eyes of u. s. h.-w. well marked. *E. Nerine* ♂.
 OO. Eyes of u. s. h.-w. very indistinct. *E. Gorgone* ♂.
 EE. Red band of the u. s. f.-w. well defined on both sides.
 P. Red band of the u. s. f.-w. marbled with ashy grey towards the tip and hind margin.
 Q. Red band of the f.-w. deeply indented in the centre of its outer portion. *E. Neoridas*.
 QQ. The red band regularly indented by the veins.
 R. H.-w. with a red band. *E. Pronoe*.
 RR. H.-w. with no red band. *E. Melas* ♀.
 QQQ. The band cut by the veins into narrow rings.
 S. H.-w. with eyes. *E. Embla*.
 SS. H.-w. without eyes. *E. Disa*.
 PP. Red band of the u. s. f.-w. only marbled with grey towards the hind margin.
 T. Red band wholly absent above. *E. Melas* ♂.
 TT. Red band well marked, at least on f.-w.
 U. U. s. h.-w. with a white streak. *E. Ligea*.
 UU. U. s. h.-w. with no white streak.
 V. F.-w. with three eyes. *E. Pirene*.
 VV. F.-w. with four eyes. *E. Medea*.

- DD. U. s. h.-w. deep black, unspotted.
 W. F.-w. with four dots. *E. Ocnus*.
 WW. F.-w. immaculate or with two or three eyes.
E. Alecto.
- DDD. U. s. h.-w. unicolorous with spots or rings round red eyes.
 X. Wings with elongated red spots.
 Y. Wings rounded.
 Z. Wings immaculate. *E. Pharte*.
 ZZ. Wings with black dots.
 2 A. H.-w. without dots. *E. Eriphyle*.
 2 AA. H.-w. with dots. *E. Melampus*.
 YY. Wings dentated.
 2 B. Wings immaculate. *E. Pyrrha*.
 2 BB. Wings with small eyes. *E. Ceto*.
 2 BBB. Wings with rather large eyes.
E. Euryale (sometimes).
- XX. Wings with red rings round eyes.
 2 C. Not measuring more than 1" 6". *E. Epiphron*.
 2 CC. Measuring more than 1" 6".
 2 D. F.-w. with one or two red spots. *E. Oeme*.
 2 DD. F.-w. with a red band.
 2 E. U. s. f.-w. with five eyes.
E. Euryale (sometimes).
 2 EE. U. s. f.-w. rarely with more than the two apical eyes visible. *E. Medusa*.

Next to *Polyommatus*, *Erebia* is the largest genus of RHOPALOCERA in Europe. It is also one of the most difficult.

*E. EPIPHRON. 1" 1"—1" 6". Brown, with a fulvous marginal red band enclosing a variable number of black spots, sometimes with white pupils. The band varies very much in intensity, and, especially on the h.-w., is sometimes nearly wanting. VI—VII.

Larva pale green, with numerous darker green longitudinal lines shading into the ground colour, and a white lateral stripe on the region of the spiracles. (Wailes.)
On *Poa annua* and *Festuca ovina*.

*E. MELAMPUS. 1" 2'''—1" 3'''. Rather dark brown, with five or six fulvous marginal spots on the f.-w. and four on the h.-w., of which all are more or less confluent, and several are marked with very small black dots. VII.

LARVA UNKNOWN.

†E. ERIPHYLE. 1" 4'''—1" 5'''. Brown; f.-w. with six oval fulvous spots, two or three of which are marked with a black dot; h.-w. with four or five spots redder than those on the f.-w. U. s. with the spots well represented on the h.-w.; those of the f.-w. sometimes distinct from the ground colour, and sometimes nearly lost in it. (H. S.)

LARVA UNKNOWN.

E. ARETE. 1" 3'''. ♂ f.-w. brown, with a fulvous band divided by the veins into long streaks of irregular length; h.-w. with another band shorter and less distinctly veined. ♀ (H. S.) h.-w. brown, with a marginal row of five white dots. U. s. f.-w. fulvous, costa and hind margin brown, distinctly shot with green; h.-w. reddish brown with five very distinct marginal dots.

LARVA UNKNOWN.

*E. MNESTRA. 1" 2'''—1" 4'''. ♂ brown, with five fulvous spots on the f.-w. and four red ones on the h.-w. ♀ with a very broad fulvous marginal band on the f.-w., enclosing two black dots near the tip, and divided by the veins of the wings; this band is more slightly marked on the h.-w. F.-w. slightly tinged with fulvous between the band and the base. VII.

LARVA UNKNOWN.

*E. PHARTE. 1" 4'''—1" 5'''. Brown, with a marginal row of red spots on the f.-w. and generally also on the

h.-w. U. s. always with the marginal spots on all the wings. VII—VIII.

LARVA UNKNOWN.

*E. PYRRHA. 1" 3"—1" 4". Dull brown. ♂ with a marginal streak of confluent red spots above and below, but with only a few small black dots in that of the f.-w. ♀ with the red band wanting on the h.-w. above, but u. s. f.-w. with the red band and some red basal marks; h.-w. with large yellowish marginal and basal spots. VII—VIII.

LARVA UNKNOWN.

*E. CETO. 1" 4"—1" 7". Differs from *Pyrrha* in generally having a purplish tint in the paler marginal spots, which contain small black eyes with white pupils, and in having no basal markings on the u. s. VII.

LARVA UNKNOWN.

*E. OEME. 1" 3"—1" 5". Dull brown, with a red spot with two white pupils near the tip of f.-w., and some red ocellated marginal dots on the h.-w. VI—VII.

LARVA UNKNOWN.

*E. MEDUSA. 1" 7"—1" 9". Brown, with a yellowish fulvous marginal band, enclosing black eyes with bluish white pupils; the largest is at the tip of the f.-w. and is bi-pupilled. V—VI.

Larva delicate green, with a dorsal and three lateral stripes of darker green, the dorsal and the lowest of the lateral stripes edged with white; head and legs green. (V.G.) On *Panicum sanguinale*. IV—V.

*E. PIRENE. 1" 1"—1" 7". Dark brown, with reddish marginal bands of variable intensity; f.-w. with a black apical eye in the band bi-pupilled with white, and a small black eye with a white pupil near the anal angle. H.-w. with from three to five black eyes with white pupils. VI—VII.

LARVA UNKNOWN.

E. NERINE. 1" 11". Very close to *Pirene* above. U. s. f.-w. dark fulvous, with the bi-pupilled apical eye; hind margin and costa brown. H.-w. with some whitish markings. VIII—IX.

LARVA UNKNOWN.

*E. EVIAS. 1" 6"—1" 9". Dark brown, with a broad marginal red band enclosing a variable number of black eyes with white pupils. Towards the tip of f.-w. is an elongated black eye enclosing three white pupils. VII.

LARVA UNKNOWN.

*E. MELAS. 1" 5"—1" 7". ♂ blackish brown; f.-w. with a black apical eye bi-pupilled with white, and a smaller one with one pupil near the anal angle; h.-w. with three eyes. ♀ paler, with four eyes larger than in the ♂ on all the wings; those of the f.-w. more or less surrounded with fulvous. VI—VII.

LARVA UNKNOWN.

*E. ALECTO. 1" 7". Black; the usual fulvous band seldom represented; eyes absent, except occasionally two small apical eyes on f.-w. U. s. h.-w. black, with only a few paler markings in ♀. VI—VIII.

LARVA UNKNOWN.

*E. SCIPIO. 1" 11". Brown, with a marginal red band. F.-w. with a black apical eye, with three white pupils; h.-w. with or without three marginal eyes. VII.

LARVA UNKNOWN.

*E. STYGNE. 1" 6"—1" 7". Brown; f.-w. with the disc. cell more or less filled with yellowish; marginal band yellowish, marked with a black apical eye with three white pupils, and some smaller eyes nearer the anal angle; h.-w. with the marginal band reddish, and marked with a few white dots in very small black rings. III.

LARVA UNKNOWN.

*E. AFRA. 1" 4'''—1" 5'''. Dull brown, with a marginal row of black eyes with blue pupils, in yellowish fulvous rings. The apical eye of the f.-w. is very small, and on the inner side of that is a large black eye with two blue pupils, in a fulvous ring, which is much nearer the base than any of the others. U. s. h.-w. with broad white veins. VI—VII.

LARVA UNKNOWN.

*E. PARMENIO. 2" 2''. Brown; f.-w. with a large black apical eye bi-pupilled with white in a fulvous ring, and two smaller ones below it; sometimes there is another small eye on the outside of the large one. H.-w. with four or five marginal black eyes with white pupils, in fulvous rings. U. s. f.-w. fulvous, with the eyes, the veins distinctly whitish; h.-w. with the veins very broadly white.

LARVA UNKNOWN.

*E. MANTO. 1" 4'''—1" 9'''. Dull brown, often slightly shot with purple. F.-w. with a fulvous marginal band divided by the veins, and enclosing four or five black dots; h.-w. sometimes with three or four black dots in fulvous rings. VII—VIII.

LARVA UNKNOWN.

†E. OCNUS. 1" 6'''. Dark brown or black, with six long oval marginal red streaks, gradually shading into the ground colour towards the base. H.-w. above and below uniform dark brownish black. U. s. f.-w. fulvous, costa and hind margin dark brown; two black dots near the tip of the fulvous part of the wing. (H. S.)

LARVA UNKNOWN.

*E. TYNDARUS. 1" 2'''—1" 5'''. Brown, very distinctly shot with brassy green. F.-w. with a large black eye bi-pupilled with bluish white, in a fulvous ring; h.-w. with or without three or four black eyes with white pupils surrounded with fulvous. VI—VII.

LARVA UNKNOWN.

*E. GORGE. 1" 2'''—1" 3'''. Brown, with a fulvous marginal band. F.-w. with two or three small black apical dots or eyes; h.-w. with or without three similar marginal ones. VII—VIII.

LARVA UNKNOWN.

*E. GORGONE. 1" 3'''—1" 4'''. Dull brown, with a suffused reddish marginal band marked with from two to five black eyes with white pupils on the f.-w., and three or four on the h.-w.

LARVA UNKNOWN.

*E. GOANTE. 1" 5'''—1" 7'''. Differs from *Gorgone* in the sharply defined red or yellowish fulvous marginal band. F.-w. with two apical eyes, and a third eye rather isolated; h.w. with three or four marginal eyes. VII.

LARVA UNKNOWN.

†E. REICHLINI. 1" 10'''. Dark brown; f.-w. with a fulvous band divided by the veins, marked with a large black apical eye with two white pupils; h.-w. with three marginal black eyes, with white pupils, in fulvous rings. Nearer the tip is a fulvous spot. U. s. with an indented submarginal line on all the wings, outside which the colour is pale brown. F.-w. deep brownish red, tip ash colour, both within and without the black line; the eye is well marked, and the fulvous band of the upper side is represented by the corresponding part of the wing being light red, much paler than the ground colour. H.-w. dark brown, the veins narrowly white, and two curved white parallel lines running from the costa to the inner margin; the three eyes of the upper side are present, but by no means conspicuous. (H.S.)

LARVA UNKNOWN.

*E. PRONOE. 1" 5'''—1" 9'''. Brown; f.-w. with two black apical eyes with white pupils and surrounded with fulvous, which are sometimes confluent, and another

smaller eye towards the anal angle. H.-w. with three marginal eyes in fulvous rings. VII—VIII.

LARVA UNKNOWN.

*E. NEORIDAS. 1" 5". Brown with a fulvous marginal band; f.-w. with a large black apical eye bi-pupilled with white, and a small eye with one pupil at the anal angle; between these is sometimes a black dot; h.-w. with three small eyes. U. s. f.-w. tinged with fulvous between the base and the band; h.-w. with no eyes. VI—VIII.

LARVA UNKNOWN.

*E. MEDEA. 1" 4"—1" 9". Differs little from *Neoridas*, except in not having the basal portion of the u. s. f.-w. tinged with fulvous, in the u. s. h.-w. being marked with some very inconspicuous eyes, and in having the h.-w. much more rounded. VII—IX.

Larva pale green with a dark green or brownish dorsal stripe and two white lateral ones, the lower enclosing the spiracles, both narrowly bordered by the same dark colour on each side. (Wailes.) On different species of *Poa*. X.

*E. LIGEA. 1" 8"—1" 9". Rich reddish brown; marginal bands red with four black eyes with white pupils on the f.-w. and three on the h.-w.; the two apical ones on the f.-w. are often confluent, forming a bi-pupilled eye. U. s. h.-w. with an irregular and interrupted white band. VII—VIII.

Larva clear yellowish grey, dorsal line dark brown bordered by pale lines; a pale lateral line above the spiracles. (V. G.) On grasses. III—IV. IX.

*E. EURYALE. 1" 5"—1" 6". Dark brown with fulvous marginal bands; three or four black spots, rarely ocellated, on all the wings. VII—VIII.

Larva pale yellowish brown, dorsal stripe brown; two white lateral stripes and a brownish one above the legs. (Freyer.) VII.

*E. EMBLA. 1" 9"—1" 11". Dark brown; f.-w. with three large black marginal spots in confluent fulvous rings; h.-w. with four. The apical spot on the f.-w. is bi-pupilled with white. VI—VIII.

LARVA UNKNOWN.

*E. DISA. 1" 9"—1" 10". Brown; f.-w. with a large oval fulvous marginal blotch enclosing four black spots slightly ocellated only in the ♀. H.-w. unicolorous. VII.

LARVA UNKNOWN.

FAMILY IV. LIBYTHEIDÆ.

Palpi very long, contiguous throughout their whole length, forming a kind of beak. ♂ with the front legs rudimentary; ♀ with six perfect legs. Pupa suspended by the tail alone.

Genus 1. LIBYTHERA.

Antennæ moderately long, thickening imperceptibly from base to tip; wings large, angulated and more or less dentated.

*L. CELTIS (fig. 9). 1" 8"—1" 9". F.-w. brown, with a basal streak having a deep triangular black indentation on the costal side; the basal streak almost touches a large fulvous blotch in the centre of the wing, below which is a smaller one. Towards the tip is a fulvous blotch; on the costa is a yellowish fulvous spot. H.-w. brown with an irregular fulvous blotch in the centre. III. VI.

Larva yellowish green, finely dotted with white and yellow, with a pale yellow lateral streak in which the small brown stigmata are placed. Head and legs green. (Bd. quoted by V.G.) On *Celtis australis*. IV—V. VII.

FAMILY V. ERYCINIDÆ.

Palpi generally very small; antennæ long; hind wings slightly grooved. ♂ with the front legs rudimentary; ♀ with six perfect legs. Pupa suspended by the tail and a girth round the middle of the body.

Genus I. NEMEOBIUS.

Head small; eyes hairy; antennæ slender, club abrupt and compressed. Fore wings short, triangular; costa and hind margin nearly straight; hind wings rounded and dentated.

*N. LUCINA. 1" 1'''—1" 3'''. F.-w. brown with three rows of dull orange spots, the marginal row enclosing black dots. The marginal row is continued round the brown h.-w., and between this and the base are a few isolated orange spots. U. s. h.-w. red with a row of pale spots across the centre, and another near the base. V—VI. VIII.

Larva clear reddish brown with a darker dorsal stripe dotted with blackish, and rows of little red tubercles bearing tufts of hair; legs brownish red; head red, smooth, and shining. (V.G.) On *Primula veris* and *elatior*, and various species of *Rumex*. VI—IX.

FAMILY VI. LYCÆNIDÆ.

All the legs fitted for walking in both sexes; antennæ straight, not distinctly hooked at the tip; palpi well developed; inner margin of the hind wings slightly embracing the abdomen. Ground colour brown, copper-red, or blue.

A. Club of the antennæ very gradually formed, not thick.

B. Eyes hairy. 1. THECLA.

BB. Eyes naked. 2. AUROTIS.

AA. Club of the antennæ thick.

C. Palpi short. 3. *THESTOR*.

CC. Palpi rather long.

D. Hind wings more or less denticulated.

4. *CHRYSOPHANUS*.

DD. Hind wings very rarely perceptibly denticulated. 5. *POLYOMMATUS*.

Genus 1. *THECLA*.

Head rather small; eyes hairy. Wings in most of the species brown on the upper side, and marked with pale lines beneath. Fore wings short and triangular; hind wings strongly scalloped near the anal angle, generally with a short tail.

A. Wings brown above, not blue.

B. Wings green beneath; hind wings not tailed.

T. Rubi.

BB. Hind wings tailed.

C. Underside dull orange. *T. Betulæ*.

CC. Underside brown or grey.

D. A large blue spot at the anal angle of the hind wings beneath. *T. Spini*.

DD. No large blue spot at the anal angle of the hind wings beneath.

E. Wings beneath with central rows of spots, not with pale streaks. *T. Ledereri*.

EE. Wings beneath with pale streaks, but with no central rows of spots.

F. Central white line of u. s. f.-w. scarcely visible. *T. Ilcis*.

FF. Central white line of u. s. f.-w. well marked.

G. Central white line of u. s. h.-w. reaching nearly straight from the costa towards the marginal markings.

H. Central white line deeply indented where it nears the marginal markings, forming a very distinct white W. *T. W-album*.

HH. Central white line less deeply indented, and forming a much less distinct W. *T. Pruni*.

GG. Central white line of u. s. h.-w. irregularly broken and interrupted between the costa and the marginal markings. *T. Acaciæ*.

AA. Wings more or less blue above. *T. Quercus*.

*T. BETULÆ. 1" 4'''—1" 8''' . ♂ dark brown; f.-w. with a black disc. spot, having a pale mark on the outside; h.-w. with tail and anal angle orange; fringes white. ♀ similar, with a broad orange band across the f.-w. U. s. dull orange, with a deeper coloured marginal line; f.-w. with one, h.-w. with two, distinct white lines, and slight traces of several others. VI—VIII.

Larva pale green, with paler dorsal and oblique lateral lines. (We.) On birch and many other trees. VI—VII.

*T. SPINI. 1" 1'''—1" 3''' . Brown, with or without orange spots at the anal angle of h.-w., and at the root of the tail. U. s. grey, with one white line sharply angulated towards the anal angle of h.-w., running then to the inner margin; anal angle with a large blue spot bordered outside by another white line. Above this is a marginal orange streak or row of nearly confluent spots. V—VI.

Larva apple green, with two yellower lateral streaks next a row of small oblique dashes shaded with darker green, and a dark dorsal streak with rose-coloured spots. (V.G.) On hawthorn and blackthorn. VI.

*T. W-ALBUM. 10'''—1" 5''' . Uniform brown; h.-w. with one or two orange dots at anal angle. U. s. f.-w. with no orange marginal band; h.-w. with a broad one;

white lines on the wings, as in the last species, but less angulated. VI—VII.

Larva green with paler oblique lateral marks; the posterior segments of the abdomen spotted with dark red, and two rows of small dorsal dots. Turns brown when full fed. (We.) On elm. V—VI.

T. ILICIS. 1" 2'''—1" 4'''. Brown, generally with a small orange blotch towards the hind margin of f.-w., and a small orange spot at the anal angle of h.-w. U. s. with a white line hardly angulated, and an orange marginal band bordered with white on each side, towards the anal angle of the h.-w. V—VI.

Larva pale green with yellow dorsal and lateral dashes; head and legs black. (V.G.) On oak. V.

**T. ACACIÆ.* 1". Very close to *Ilicis*, but paler; the orange blotch of the f.-w. is wanting. H.-w. with an orange spot at the anal angle and at the root of the tail. U. s. similar to *Ilicis*, but paler, the white lines much more distinct and the marginal orange band shorter. V—VI.

Larva on sloe. (H.S.)

**T. PRUNI.* 11'''—1" 5'''. Brown, with an orange marginal band at anal angle of h.-w., and sometimes also at that of f.-w. U. s. with the pale lines bluish white, and an orange marginal band bordered with white on the h.-w. VI.

Larva green with oblique yellowish lateral lines and darker dorsal marks. (We.) On *Prunus spinosa*, oak, and other trees. V.

**T. LEDERERI.* 1" 2'''. Brown; f.-w. with a black disc. spot; h.-w. in ♀ with an orange marginal band towards the anal angle. U. s. f.-w. bluish at base, disc. spot present, hind margin with two rows of black dots; h.-w. with a marginal row of orange spots, with a white

line on each side, within which is an interrupted row of black eyes in white rings. Nearer the base are two black spots surrounded with white. VI.

LARVA UNKNOWN.

*T. QUERCUS. 1" 2"—1" 6". ♂ purplish blue, hind margins black. ♀ brown with a rich purple blotch reaching half across the front part of the f.-w. and nearly to the anal angle on the hind part. U. s. with a white line near the hind margin, and one or two orange markings at each of the anal angles. VII—VIII.

Larva reddish brown with two rows of short oblique black dorsal stripes, the intervening space being paler; dorsal line black (Dup. quoted by St.). On oak. VI.

*T. RUBI. 1"—1" 3". Brown; u. s. green; h.-w. with a central row of white dots. IV—V.

Larva green, with the dorsal line, a row of oblique lateral markings, and another line above the feet all clear yellow. (V.G.) On bramble and other plants. VII—VIII.

Genus 2. AUROTIS.

Eyes naked; hind wings not scalloped at the anal angle, and destitute of a tail. Under side with no white lines.

*A. ROBORIS. 1" 4". ♂ f.-w. purplish, hind margin and tip broadly and costa narrowly brown; h.-w. brown with a few purple marginal spots, base purple. ♀ brown; f.-w. with three purplish blue basal streaks, the centre one shortest; h.-w. brown with six purplish blue marginal spots. U. s. silvery grey with a marginal row of orange spots edged internally by a row of white ones, and externally by a blue and pink shot line, most conspicuous on h.-w. Between the white and orange spots is a row of black dots. VI.

Larva dull brown with a black dorsal streak bordered with obscure yellowish markings. (Germain quoted by V.G.) On oak?

Genus 3. THESTOR.

Club of the antennæ distinct, rather thick; eyes hairy; palpi short; hind wings with no tail.

*T. BALLUS. 1". ♂ brown with traces of a marginal orange band at anal angle of h.-w. ♀ (fig. 10), f.-w. orange, costa and hind margin broadly brown; h.-w. brown, with a broad marginal orange band. U. s. f.-w. as in the ♀ above, but the base is green, and the orange markings are replaced by copper-red, and marked with numerous black spots. H.-w. *green*, hind margin broadly pale brown. III.

Larva yellowish white with a row of reddish dorsal spots bordered with brownish red and bisected by a blue line; oblique streaks and lateral line violet red. Head brown, first and second segments washed with reddish. (V.G.) On *Lotus hispidus*. V.

†T. CALLIMACHUS. 11'''—1" 2'''. F.-w. red; costa, hind margin and inner margin brown; h.-w. brown with a large oval marginal orange blotch. U. s. f.-w. red, costa greyish white with black dots; a large pure white spot in the centre of the costa with a black lunule on each side; h.-w. *grey* with pale orange and black dots. (Nor.) V.

LARVA UNKNOWN.

Genus 4. CHRYSOPHANUS.

Eyes naked; antennæ long, terminated by an abrupt fusiform club; palpi rather long; hind wings slightly denticulated, sometimes with a short tail; wings generally brilliant orange or copper red, often shot with brown, and always with black spots on the upper side, at least in the ♀.

A. Hind wings beneath with a double row of marginal spots enclosing a red band.

B. Marginal lunules of u. s. f.-w. bounded with white within. *C. Helle*.

BB. Marginal lunules of u. s. f.-w. never bounded with white within.

C. Eyes of the u. s. f.-w. placed vertically in seven pairs.

D. Marginal spots of the u. s. running across all the wings in a double row.

E. Ground colour copper. *C. Thersamon*.

EE. Ground colour brown.

F. Hind wings strongly emarginate before reaching the anal angle. *C. Dorilis*.

FF. Hind wings not emarginate. *C. Hypoxanthe*.

DD. Only the outer marginal spots present on the u. s. h.-w.

G. Wings copper, shot with violet. *C. Gordius*.

GG. Wings violet brown. *C. Alciphron*.

CC. U. s. f.-w. with four eyes in a nearly straight line, the third only placed a little nearer the base.

H. U. s. h.-w. grey. *C. Eurydice*.

HH. U. s. h.-w. ashy, base broadly bluish. *C. Hippothoe*.

AA. U. s. h.-w. without a double row of black spots before the hind margin inclosing a red band.

I. U. s. h.-w. with eyes regularly enclosed by paler rings, darker towards the hind margin, with orange lunules. *C. Ottomanus*.

II. Eyes of the u. s. h.-w. very small, only indistinctly surrounded with paler.

J. U. s. h.-w. yellowish brown. *C. Virgaureæ*.

JJ. U. s. h.-w. brownish grey. *C. Phlæas*.

**C. VIRGAUREÆ*. 1" 1'''—1" 3'''. ♂ brilliant copper red, unspotted above, with a rather narrow black border. ♀ dull copper with numerous black spots and markings. U. s. h.-w. yellowish brown with a more or less distinct

white band across the middle, and a marginal orange line at the anal angle. V—VIII.

Larva pubescent, dull green with a pale yellow dorsal line, and pale green lateral streaks. (We.) On *Solidago virgaurea*, *Rumex*, and other low plants. VI. IX.

C. OTTOMANUS. 1" 1". Brilliant copper red; hind margins brown; f.-w. with a disc. lunule and a marginal row of black dots; between the lunule and the base are two black dots. U. s. f.-w. pale copper yellow with the markings more distinct, and an outer row of marginal spots. H.-w. greenish or yellowish grey, hind margin brown with five orange spots; between this and the base are many black dots. III. VI.

LARVA UNKNOWN.

*C. THERSAMON. 11"—1" 1". ♂ copper, sometimes with a few black dots on f.-w.; h.-w. darker towards the base. All the wings with a narrow black border. ♀ similar, but with two disc. spots and two rows of marginal dots on f.-w. U. s. f.-w. yellowish copper; h.-w. slate colour, with a marginal orange band. V—VII.

LARVA UNKNOWN.

*C. HIPPOTHOE. 1" 1"—1" 7". ♂ brilliant copper, with two disc. spots on f.-w.; black border rather narrow. ♀ copper, with at least two distinct disc. spots on f.-w.; black border rather broad; a marginal row of large and regular black spots. H.-w. black, with the veins and a marginal band copper. VI—VIII.

Larva hairy, bright green, with innumerable white dots. (Steph. quoted by We.) On *Rumex hydrolapathum* and *R. aquaticus*. VI.

*C. EURYDICE. 1" 1"—1" 3". ♂ bright copper red; f.-w. with one distinct disc. spot; borders and inner margin of h.-w. rather broadly black (type) or purple (var. *Chryseis*). ♀ f.-w. varies from brown shot with

copper to rather dull copper; one or two irregular rows of marginal spots. H.-w. brown, with a marginal orange or copper streak enclosing black spots. On the centre, which is sometimes tinged with copper, is generally a row of still blacker spots. VI—VIII.

Larva green, with a darker dorsal stripe and two paler lateral lines. (Freyer quoted by St.) On *Rumex acetosa* and *obtusus*. VI.

*C. ALCIPHON. 1" 2"—1" 3". ♂ violet brown; wings especially; h.-w. tinged with copper; f.-w. with two disc. spots, and a row of black spots nearer the hind margin; h.-w. nearly similar, the black spots less conspicuous. VI—VII.

Larva dull green, darker on the back and sides. Stigmata blackish, head brownish. (V.G.) On *Rumex acetosa*. IV—V.

*C. GORDIUS. 1" 2"—1" 5". Copper, strongly tinged with violet, especially at the base. Numerous black or violet spots on all the wings. VI—VII.

LARVA UNKNOWN.

*C. DORILIS. 11"—1" 1". ♂ dark brown, sometimes tinged with copper, and spotted with black, especially on f.-w.; traces of a marginal copper band at least at the anal angle of h.-w. ♀ f.-w. brown, the whole central portion filled with copper, with numerous black markings. A marginal copper band on all the wings, enclosing black spots on h.-w. U. s. greenish yellow spotted with black, and having a pale orange marginal line. H.-w. strongly emarginate before the anal angle. III. V—VIII.

Larva apple green, dorsal line darker, bordered with paler; a pale lateral line. (V.G.) On *Genista scoparia*. VI. IX.

*C. HYPOXANTHE. 1" 1"—1" 3". ♂ brown, spotted with black, and with faint traces of a marginal orange band. ♀ (fig. 11) with a much more distinct copper

band enclosing black spots on h.-w.; f.-w. slightly tinged with copper in the centre. H.-w. in both sexes rounded, not emarginate. U. s. yellow with marginal copper bands; inner margin of f.-w. in ♂, and the greater portion of the wing in ♀, copper.

LARVA UNKNOWN.

A pair of this species exists in the British Museum, enumerated in the catalogue of LYCÆNIDÆ as "*Polyommatus Hypoxanthe* Boisd. MSS.," and stated to come from Polish Ukraine. I have carefully compared them with *C. Dorilis*; but, though closely allied, I cannot consider them identical with that species.

*C. PHLÆAS. 11"—1" 4". F.-w. bright copper red, hind margin black; two black disc. spots and an irregular band of black spots towards the hind margin. H.-w. black, with a marginal copper band, not distinctly enclosing black spots. III—X.

Larva green, with pale dorsal and lateral lines. (We.) On *Rumex acetosa*. V. VII. IX.

*C. HELLE. 9"—11". F.-w. black, with a marginal copper band, within which is a row of purple spots; next to this is a copper and a black band, and within this a copper blotch marked with one or two black spots; base black. The whole more or less shot with violet purple. H.-w. black, with a marginal copper band edged internally by a row of purple spots, the basal portion sometimes tinged with purple. V—VIII.

Larva pale green, dorsal stripe darker; head and anus yellow or reddish. (V.G.) On *Rumex patientia*. VI. IX.

Genus 5. POLYOMMATUS.

Antennæ slender, club abrupt and elongated; palpi rather long; eyes sometimes hairy, sometimes naked; wings rarely tailed or conspicuously denticulated. ♂ generally blue; ♀ generally brown.

- A. Hind wings with a short tail.
- B. All the wings with a broad central lunule on the u. s. *P. Balcanica*.
- BB. All the wings with a narrow central lunule on the u. s. *P. Tiresius*.
- BBB. No central lunule on the u. s.
- C. White streaks of u. s. nearly straight. *P. Bæticus*.
- CC. White streaks of u. s. much waved. *P. Telicanus*.
- AA. Hind wings with no tail.
- D. U. s. h.-w. with no red spots.
- E. All the wings with irregular white spots instead of eyes on the u. s. *P. Rhymnus*.
- EE. Eyes of the u. s. h.-w. replaced by large oval white spots. *P. Pheretes*.
- EEE. U. s. h.-w. with eyes.
- F. Hind wings rounded and entire.
- G. Wings beneath unspotted before the hind margin, or with a double row of obsolete black spots; the outer ones rounded, the inner ones lunule shaped
- H. U. s. f.-w. with oblique streaks instead of eyes. *P. Argiolus*.
- HH. U. s. with round eyes.
- I. U. s. h.-w. with a white longitudinal basal streak.
- J. Eyes of the u. s. h.-w. much smaller than those of the u. s. f.-w.
- K. A large triangular white mark on the inner margin of the u. s. f.-w. *P. Menalcas*.
- KK. U. s. f.-w. unicolorous.
- L. Basal streak of u. s. h.-w. white, very large, and well marked. *P. Damon*.
- LL. Basal streak rather narrow and indistinct. *P. Damocles*.

- LLL. Basal streak very large, but yellowish white.
P. Hoppferi.
- JJ. Eyes of all the wings of equal size.
 M. Eyes of the u. s. f.-w. in narrow white rings.
P. Donzelii.
- MM. Eyes of the u. s. f.-w. in rather broad and unusually well-marked rings. *P. Rippertii.*
- II. U. s. h.-w. with no white basal streak.
 N. Central row of eyes of the u. s. f.-w. receding from the hind margin towards the tip.
- O. U. s. h.-w. almost entirely green.
 P. Eyes of the u. s. f.-w. very large. *P. Cyllarus.*
- PP. Eyes of the u. s. f.-w. rather small, of the same size as those on the h.-w.
P. Cælestina.
- OO. U. s. h.-w. green at the base only. *P. Melanops.*
- NN. Central row of eyes of the u. s. f.-w. waved, the middle ones nearest the hind margin.
- Q. U. s. greyish brown. *P. Arcas.*
- QQ. U. s. reddish grey.
 R. The rudimentary sub-marginal markings conspicuous. *P. Admetus.*
- RR. The sub-marginal markings almost entirely wanting.
- S. Eyes of all the wings equal in size.
P. Semiargus.
- SS. Eyes of the u. s. h.-w. less than those of the f.-w. *P. Lefebvrei.*
- NNN. Central row of eyes of the u. s. f.-w. nearly parallel to the hind margin.
- T. Expands more than an inch. *P. Iolas.*
- TT. Expands an inch or less.
 U. ♂ blue; ♀ blue at base. *P. Sebrus.*
- UU. ♂ brown dusted with blue; ♀ uniform brown. *P. Alsus.*

- GG. U. s. with a double row of black spots before the hind margin, the innermost rounded, the outer ones sublunate and less conspicuous.
- V. Hind margins of the wings above with eyes marked with orange. *P. Psylorita*.
- VV. No marginal spots on the wings above.
- W. A central row of spots on the f.-w. in ♂, and on all above the wings in ♀. *P. Diomedes*.
- WW. ♂ with no central spots above; ♀ with a row on the f.-w. only. *P. Alcon*.
- GGG. U. s. f.-w. with one or more eyes between the base and the disc. lunule; all the wings with a double row of black spots, the outermost rounded, the inner ones lunule shaped.
- X. Expands an inch or less. *P. Lysimon*.
- XX. Expands considerably more than an inch. *P. Arion*.
- FF. Hind wings more or less dentated. *P. Daphnis*.
- DD. U. s. with red spots before the hind margin.
- Y. One or two eyes between the disc. lunule and the base of u. s. f.-w.
- Z. The eyes of the u. s. h.-w. frequently almost obliterated with white, especially the disc. spot. *P. Orbitulus*.
- ZZ. The eyes of the u. s. h.-w. not so extensively marked with white.
- 2 A. U. s. h.w. with no white band between the row of eyes and the marginal spots.
- 2 B. Hind wings with no red spots above.
- 2 C. Eyes and spots not surrounded with white. *P. Battus*.
- 2 CC. Eyes and spots surrounded with white. *P. Hylas*.

- 2 BB. Hind wings with red spots above. *P. Bavius*.
- ZZ. U. s. h.-w. with traces of a white band between the row of eyes and the marginal spots.
- 2 D. Fringes unspotted.
- 2 E. Red marginal spots of u. s. h.-w. nearly obsolete. *P. Eros*.
- 2 EE. Red spots well marked.
- 2 F. ♂ lilac blue; ♀ blue at base. *P. Icarus*
- 2 FF. ♂ pale blue; ♀ brown. *P. Eroides*.
- 2 DD. Fringes spotted.
- 2 G. Inner marginal spots of u. s. f.-w. obtuse. *P. Corydon*.
- 2 GG. Inner marginal spots of u. s. f.-w. axe-shaped. *P. Adonis*.
- YY. U. s. f.-w. with no spot between the base and the disc. lunule.
- 2 H. Outer marginal spots of u. s. h.-w. black, not silvery.
- 2 I. U. s. h.-w. with a white basal streak running between the third and fourth eyes to the hind margin. *P. Donzelii* and *P. Rippertii* (sometimes).
- 2 II. A white streak running from the disc. lunule of u. s. h.-w. between the fourth and fifth eyes to the hind margin. *P. Chiron*.
- 2 III. U. s. h.-w. with white spots and spaces between the third and fourth eyes.
- 2 J. Eyes of the u. s. h.-w. not placed in a straight line.
- 2 K. Marginal lunules of the u. s. f.-w. wanting. *P. Idas*.
- 2 KK. Marginal lunules nearly wanting on u. s. f.-w. *P. Helena*.

- 2 KKK. Marginal lunules of u. s. f.-w. present.
- 2 L. Three or four distinct spots between the disc. lunule and the base. *P. Anteros*, *P. Panope*, and *P. Hyacinthus* ♀.
- 2 LL. Two distinct basal spots. *P. Pylaon*.
- 2 LLL. One distinct basal spot. *P. Hyacinthus* ♂.
- 2 LLLL. The basal spots losing themselves in the darker basal colouring. *P. Medon*.
- 2 JJ. Eyes of the u. s. h.-w. straight or nearly so.
- 2 M. All the wings beneath with bright red spots.
- 2 N. Fringes unspotted. *P. Dorylas*.
- 2 NN. Fringes of the costa spotted on the u. s. *P. Agestor* and *P. Hesperica*.
- 2 MM. U. s. with scarcely the rudiments of red spots. *P. Admetus* (sometimes).
- 2 IIII. U. s. h.-w. without white spots and bands. *P. Amandus*.
- 2 HH. Outer marginal spots of u. s. h.-w. metallic blue or green.
- 2 O. U. s. f.-w. with marginal red spots.
- 2 P. Wings with a distinct black border varying in width. *P. Argus* and *P. Ægon*.
- 2 PP. Wings with no distinct border. *P. Zephyras*.
- 2 PPP. Wings with a whitish sub-marginal line. *P. Cyane*.
- OO. Only the u. s. h.-w. with marginal red spots.
- 2 Q. All the eyes very black.
- 2 R. H.-w. rounded and entire. *P. Optilete*.
- 2 RR. H.-w. slightly dentated. *P. Fischeri*.
- 2 QQ. Eyes of the u. s. h.-w. not darker than the ground colour. *P. Trochilus*.

The above table is adapted from Herrich Schaffer. He does not include in it *P. Cyane*, *P. Pylaon*, *P. Panope*, *P. Psylorita*, *P. Helena*, *P. Cælestina*, *P. Hyacinthus*, nor *P. Hopfferi*, which have either been discovered since he drew up his elaborate table, or, from some other reason, have been omitted. All the above-mentioned species are figured in his work, except *P. Panope* and *P. Helena*. I have, to the best of my judgment, inserted them in their proper places; but I mention this in case of an accidental error with regard to these species having crept in. I may also remark that I do not suppose the above table, elaborate as it is, is sufficient to separate all the varieties of any given species from those of another species, perhaps considerably removed from it in the table.

**P. BÆTICUS*. 1" 1'''—1" 4'''. ♂ violet blue with two large black spots at the anal angle of f.-w. ♀ brown, blue only at the base of f.-w. and the inner margin of h.-w. U. s. pale brown with numerous nearly straight white streaks; the spots at the anal angle of h.-w. black, edged below with metallic green, and broadly surrounded with orange. VIII—IX.

Larva green or dark reddish brown with a dark dorsal streak. Lateral line and oblique streaks and belly paler than the ground colour. (V.G.) In the pods of *Colutea arborescens*, the common pea, and other *Leguminosæ*. VI—VII.

**P. TELICANUS*. 10''—1". ♂ violet blue, the spots at anal angle of h.-w. very small. ♀ brown, blue at base, with some faint black markings outside the blue portion of the wings. U. s. brown with numerous much waved white streaks; anal spots of h.-w. brilliant metallic green, only slightly surrounded with orange. VII—VIII.

Larva purplish red, the narrow oblique lines and the dorsal streak darker. (V.G.) On the flowers of *Lythrum salicaria*. VIII—IX.

*P. BALCANICA. 9"—10". ♂ pale violet blue with several black spots on f.-w. ♀ brown with indistinct greyish and whitish markings. U. s. white with very numerous black lines and spots; h.-w. with a marginal row of metallic green spots.

LARVA UNKNOWN.

*P. TIRESIAS. 8"—1". ♂ lilac blue with a narrow brown border. ♀ brown with two orange spots at anal angle of h.-w. U. s. pale blue with black spots, the anal orange spots present, and f.-w. having faint traces of a marginal orange band. V—VIII.

LARVA UNKNOWN.

*P. FISCHERI. 8"—9". Brown with a black disc. spot on f.-w. U. s. greyish with black spots and traces of a marginal orange band, especially two or three orange spots at anal angle of h.-w. VII.

LARVA UNKNOWN.

*P. TROCHILUS. 7". Brown; h.-w. with two or three black spots partially surrounded with orange near the anal angle. U. s. pale grey; f.-w. with a disc. spot and a central row of eyes; h.-w. with a row of spots near the base, and a spot on the costa outside them. Four black marginal eyes surrounded with orange and metallic yellow towards the anal angle. The outer part of all the wings with numerous white lines.

LARVA UNKNOWN.

The smallest butterfly known to occur in Europe. It is almost impossible to distinguish the markings of the u. s. without a pocket lens.

*P. *ÆGON*. 11'''—1" 2'''. ♂ deep blue with a *moderately broad* black border. ♀ brown, more or less blue at base, with marginal red spots on h.-w. U. s. ♂ bluish grey with a marginal row of large orange spots, and three rows of black eyes, the outermost having metallic blue pupils on the h.-w. ♀ brown, slightly bluish at base, otherwise as in ♂. V—VIII.

Larva brown; two rows of oblique white lines near the dorsal line, and a white lateral line. (Freyer quoted by St.) On vetches. V.

*P. *ARGUS*. 1" 1'''—1" 2'''. ♂ with the border *much narrower* than in *Ægon*; ♀ with the orange spots very indistinct; ground colour usually considerably tinged with blue. U. s. with *much smaller spots*, and less blue. V—VII.

Larva dark green with a red dorsal line, and oblique red marginal streaks bordered with whitish. (V.G.) On *Melilotus officinalis*, different species of *Genista*, &c. V.

*P. *OPTILETE*. 9'''—11'''. ♂ very dark purple with a narrow black border. ♀ brown, the basal half purple; h.-w. with an orange spot at anal angle. U. s. grey; f.-w. with disc. lunule and two marginal rows of black eyes; h.-w. with three rows, the outermost with a few metallic green eyes towards the anal angles, where one or two orange spots are placed. VI—VII.

Larva unicolorous pale green; head blackish; short reddish hairs, and white spiracles. (Freyer.) On *Vaccinium Oxycoccus*.

P. *CYANE*. 1" 4'''—1" 6'''. ♂ bright blue with a narrow black border. ♀ (H. S.) brown, blue at base, with a marginal row of white spots on all the wings, bounded externally by a row of orange spots on the h.-w. U. s. whitish grey with markings similar to *Celestina*, but green only at base, and the marginal eyes slightly marked with metallic blue. VI—VII.

LARVA UNKNOWN.

*P. ZEPHYRUS. 1"—1" 1". ♂ blue; hind margins with a narrow black line; fringes white; h.-w. with three black dots at anal angle. ♀ brown, the black dots marked with orange. U. s. with an orange band almost equally distinct on all the wings, having a row of black dots outside; f.-w. with five inside, and in ♀ a brown blotch at the lower end; h.-w. with a row of black eyes much marked with white, and, like the band, sharply angulated in the centre. VI—VII.

LARVA UNKNOWN.

*P. PYLAON. 11". ♂ pale blue, edged with a very narrow black line; three more or less distinct black dots marked with orange at anal angle of h.-w. Fringes white; black line of h.-w. edged within by a white one. ♀ (H. S.) brown, the marginal orange spots becoming more obsolete as they recede from the anal angles of all the wings. U. s. with a marginal row of very large orange spots edged on both sides with black dots; f.-w. with a row of eyes outside the disc. spot; h.-w. with eyes running all round the disc. spot, and one or two detached ones. V.

LARVA UNKNOWN.

†P. BAVIUS. 1" 2"—1" 4". ♂ purplish blue with a rather large black border, and three or four black eyes in orange rings at the anal angle of h.-w.; fringes white spotted with black. ♀ dark brown, slightly orange at base, with a marginal row of orange spots on h.-w. U. s. f.-w. with the spots much larger than on h.-w.; a marginal row of eyes, a second much curved row, and at least two disc. spots. H.-w. with a marginal row of orange spots, edged outside by black spots and inside by black lunules; a much waved central row of eyes round the disc. lunule, and a basal row of four spots. (H.S.)

LARVA UNKNOWN.

*P. *BATTUS*. 10'''—1". Brown, fringes spotted with white; two thirds of the basal portion of f.-w. and the base in h.-w. purplish blue in ♂. F.-w. with a large disc. lunule. Hind margin of f.-w. with rows of more or less distinct bluish white spots; on the h.-w. are indistinct black spots in rings of bluish white. U. s. with many rows of very large and distinct black spots; h.-w. with a broad orange central band. V—VI.

Larva sea green with a violet dorsal line. (V.G.) On *Sedum Telephium*. VII.

*P. *HYLAS*. 9'''—10''' . ♂ pale blue with a disc. lunule; fringes much less distinctly spotted than in *Battus*. A few black dots towards the anal angle of h.-w. ♀ brown, more or less blue at base, this colour never reaching beyond the disc. lunule of f.-w. A marginal row of bluish white lunules, partly enclosing some black spots on h.-w. U. s. bluish grey, f.-w. with two disc. spots and two marginal rows of black spots, the innermost much angulated; h.-w. with a marginal row of orange spots edged by black dots. Nearer the base are many irregular black spots, outside which is another row of black spots. V—VIII.

LARVA UNKNOWN.

†P. *PANOPE*. 10'''—1" 1''' . Brown, blue in the centre and towards the base; fringes spotted with black and white. U. s. greyish brown, with black disc. lunules, a curved row of black eyes outside them, and a double submarginal row of black dots; h.-w. with three or four basal eyes. All the eyes except the submarginal dots are rather large, and surrounded with white. (E.)

LARVA UNKNOWN.

*P. *LYSIMON*. 8''' . Brown; ♂ with the basal half of the wings violet blue, ♀ slightly tinged with the same colour at base. U. s. pale grey, not blue or green at

base, a disc. lunule, a double row of black marginal spots, and an angulated central row of black dots.

LARVA UNKNOWN.

*P. RHYMNUS. 10^{'''}. Brown, base with a greenish purplish tinge. U. s. dark brown with a slight greenish tinge; speckled all over with white spots. V—VI.

LARVA UNKNOWN.

*P. PSYLORITA. 10^{'''}—11^{'''}. Pale brown, with a marginal row of orange yellow spots. U. s. white or silvery grey; all the usual rows of eyes reduced to simple dots, and very indistinct; marginal band pale yellow, frequently almost obliterated.

LARVA UNKNOWN.

*P. PHERETES. 1^{''}. ♂ blue, with a narrow black border; ♀ (V. G.) uniform brown. U. s. h.-w. dark grey with several very large white spots. VII.

LARVA UNKNOWN.

*P. ORBITULUS. 8^{'''}—11^{'''}. ♂ brown, dusted with very pale bluish grey, base more distinctly bluish; hind margins brown; all the wings with a disc. spot; fringes white; h.-w. with two obscure ocellated black spots at anal angle. ♀ brown. U. s. f.-w. yellowish brown with two marginal rows of black eyes in white rings, of which only the innermost one is indistinct; two disc. spots present, divided by one of the white veins of the wing; h.-w. darker, a white band hardly marked with black on the hind margin; anal angle with two orange spots. A large central white blotch; the innermost row of spots on the f.-w. is represented by two spots resembling a white figure of 8 filled up with black, in the centre of the costa. VII—VIII.

LARVA UNKNOWN.

*P. MEDON. 1^{''}—1^{''} 2^{'''}. Brown, with a marginal row

of very distinct orange spots; u. s. with a marginal row of orange spots and a disc. lunule with a row of white eyes with or without white pupils between them. Nearer the base are three similar eyes on the h.-w. V—VIII.

Larva pale bluish green with a dark green dorsal line and a pinkish lateral one; head glossy black (Logan quoted by St.). On *Helianthemum vulgare*. V.

†P. IDAS. Brown; f.-w. with a black disc. lunule sometimes marked with white; h.-w. with from two to four marginal black dots marked with orange. U. s. with reddish brown eyes, hind margins whitish yellow with yellow fulvous lunules; f.-w. with the last lunule white, often with no others; a central irregular row of eyes, the two first widely separated from the rest; h.-w. with a broad band and triangular disc. lunule white, the second eye of the central row widely removed from the others. (R.) VI.

LARVA UNKNOWN.

*P. HYACINTHUS. 10'''—11'''. ♂ blue with very broad brown margins; ♀ brown with four black spots marked with orange at anal angle of h.-w. U. s. f.-w. grey with marginal orange spots and a straight row of small eyes; h.-w. yellowish with marginal orange spots and two irregular rows of eyes. A large white blotch a little beyond the centre.

LARVA UNKNOWN.

*P. ANTEROS. 7'''—1''. ♂ *pale whitish blue* with a *moderately broad* brown border; f.-w. with a disc. spot and h.-w. with traces of black dots surrounded with orange. ♀ brown; a marginal row of large orange spots enclosing black dots on h.-w. U. s. *yellowish grey*. A marginal row of orange spots, between which and the base on f.-w. is a row of small black eyes and a disc. spot. Between the marginal spots and the base on

h.-w. are two rows of spots much mixed with white, and a basal spot.

LARVA UNKNOWN.

*P. EROS. 11". ♂ pale blue with a narrow black border; fringes white; hind margins of h.-w. spotted with black. ♀ (V.G.) very pale brown, sometimes tinged with blue, with a black disc. lunule and a marginal row of fulvous spots. U. s. f.-w. grey with a central row of black eyes in white rings, two disc. spots and a marginal row of spots slightly marked with orange; h.-w. dull green at base, a marginal row of orange spots, within which is a row of black eyes extending also along the costa; two disc. spots and traces of a white dash in middle of hind margin. VI—VIII.

LARVA UNKNOWN.

*P. EROIDES. 1" 1"—1" 4". ♂ bright blue divided by the veins towards the hind margin; a rather broad black border. ♀ brown with marginal orange lunules marked with blue; sometimes f.-w. broadly orange towards the hind margins and divided by the veins; base deep purple. U. s. grey with a marginal row of black spots marked with orange; a central row of eyes outside the disc. lunules; a basal row of five eyes; a white blotch in the centre of the hind margin in h.-w., and two eyes outside disc. lunule of h.-w.

LARVA UNKNOWN.

*P. ICARUS. 1" 2"—1" 5". ♂ lilac blue, fringes white. ♀ varies from blue to brown, but has a marginal row of red spots. U. s. with marginal red spots; f.-w. brownish grey with a row of black eyes, a disc. lunule, and two basal spots. H.-w. similar, but yellowish brown with three basal spots and a white dash in centre of hind margin. Base bluish on f.-w. greenish on h.-w. V—IX.

Larva green with a dark dorsal line, parallel to which are rows of yellow (We.) or white spots (Dup.) On grass, clover, &c. IV. VII—VIII.

*P. CHIRON. 1"—1" 2". ♂ brown, with a black disc. spot on f.-w. ♀ similar, but with a marginal row of orange spots, at least at the anal angles; fringes white. U. s. grey with a marginal row of orange spots edged internally by an indented white line; next is a row of black eyes in white rings nearly straight on f.-w., angulated on h.-w. Disc. lunule of h.-w. surrounded with white and joined to the row of spots by a broad white band. Base greenish. VI—VIII.

LARVA UNKNOWN.

*P. AMANDUS. 1"—1" 4". ♂ purplish blue, f.-w. with an ill-defined black border; h.-w. with a narrow one. Extremities of the nervures black. ♀ brown with orange marginal spots on h.-w. U. s. pale grey, hind margin with a narrow black line within which is a row of small white eyes with black pupils. Next to this is a row of orange spots, and nearer the base a row of black eyes in white rings. VI—VIII.

LARVA UNKNOWN.

*P. AGESTOR. 1" 1"—1" 4". ♂ lilac blue, the veins silvery white; fringes white, narrowly edged internally with black. ♀ brown, f.-w. with a disc. spot, hind margins with a row of orange spots, fading away gradually beyond the middle of f.-w. as they advance towards the tip. V—VII.

LARVA UNKNOWN.

†P. HESPERICA. 1" 2"—1" 3". ♂ azure blue, with a narrow black border; h.-w. with black marginal dots. ♀ brown, h.-w. with marginal fulvous lunules marked with black. U. s. grey, white at tip of f.-w., with a narrow black border, disc. lunules, and fulvous marginal spots bi-pupilled with black; f.-w. with a slightly curved row of eyes; h.-w. with two rows; marginal spots elongate, fulvous, with whitish lines within them, but no white blotch in the centre of the hind margin. (R.)

LARVA UNKNOWN.

*P. ADONIS. 1" 2'''—1" 6'''. ♂ brilliant blue, ♀ brown, bluish towards the base. U. s. grey, with disc. lunules; a basal eye on f.-w., a row of eyes, and an indistinct row of orange marginal spots. H. w. with three basal spots, forming with the usual eyes nearly a circle round the disc. spot; fringes black and white. V. V̇II—VIII.

Larva green with dorsal rows of fulvous spots (Fab. quoted by We.) On *Trifolium*, *Lotus*, *Hippocrepis*, and other *Papilionaceæ*. V—VI.

*P. CORYDON. 1" 3'''—1" 6'''. ♂ pale blue; hind margins moderately broadly black. ♀ brown. U. s. as in *Adonis*, but the three basal spots separated from the central row on h.-w., so as not to form a regular curve round the disc. spot. Fringes white, spotted with black more distinctly than in *Adonis*. V—VIII.

Larva green with yellow dorsal and lateral lines. (We.) On various *Papilionaceæ*. V—VI.

*P. DORYLAS. 11'''—1" 4'''. ♂ brilliant blue with a narrow black border. ♀ brown. F.-w. with a small disc. spot; h. w. with traces of a marginal row of orange spots at the anal angle. Fringes white. U. s. pale grey with a marginal row of orange spots and a row of black eyes within it; h.-w. with a large square white disc. spot enclosing a black dot. Opposite this is a faint white streak intersecting the hind margin. V—VI.

Larva dark green slightly mixed with brownish, lateral streak yellow, dorsal streak dark green bordered with a row of yellow streaks (Treitschke quoted by V.G.) On the flowers of *Melilotus officinalis*. V.

*P. DAPHNIS. 1" 2'''—1" 4'''. H.-w. more or less dentated. ♂ blue, hind margin black or dusky, varying in width. ♀ brown, f.-w. with a darker marginal band h.-w. with a row of orange marginal spots, partially surrounded with white. VI—VII.

LARVA UNKNOWN.

*P. ADMETUS. 1" 1'''—1" 7'''. Uniform dull brown, with faint traces of orange eyes at the anal angle of h.-w. in ♀. U. s. pale greyish brown, f.-w. with a black disc. lunule surrounded with white, and a central row of black eyes in white rings on all the wings. A double row of brown ante-marginal lunules slightly tinged with orange in ♀. VI.

LARVA UNKNOWN.

*P. RIPPERTII. 1"—1" 4'''. Uniform brown, very faintly bluish green at base on both sides, fringes dirty white. U. s. pale grey; f.-w. with a disc. lunule, a central row of eyes, and faint traces of a red marginal streak; h.-w. with one row of small black dots across the centre, and a dot at the base and another on the costa within the row of spots. A broad whitish basal streak reaching nearly to the hind margin. VI—VII.

LARVA UNKNOWN.

*P. LEFEBVREI. 11'''—1" 3'''. ♂ very pale blue, base greenish blue, the central portions of the wings shot with light brown; the veins brown towards the margins, which are also narrowly brown. ♀ dark brown, faintly bluish green at the base, with a large black disc. spot on f.-w. U. s. pale grey with disc. lunule on f.-w. and the usual central row of spots. U. s. h.-w. in ♀ with a very faint basal streak. VI—VIII.

Larva green, with slightly oblique yellowish dorsal streaks, separated by more conspicuous green lines, violet at the sides and bounded by a yellowish line. (V. G.) On *Onobrychis sativa*. V.

*P. MENALCAS. 1" 4'''—1" 7'''. ♂ dull white, base blue, hind margins narrowly brown; between the base and the small black disc. spot is a large brownish blotch. ♀ (H.S.) brown; fringes dirty white. U. s. reddish grey, f.-w. with a disc. lunule and a curved row of large black eyes; a large triangular pale blotch on the inner

margin. H.-w. with a rather narrow dull white streak, an angulated row of small black eyes, and a black basal eye on the costa. VII.

LARVA UNKNOWN.

†P. HOPFFERI. 1" 6". Very close to *Lefebvrei*; f.-w. less shot with brown. U. s. with more distinct marginal spots in a double row; h.-w. with a more distinct white streak marked with a white triangle. ♀ differs from *Admetus* only in the fringes being brown, not white, except at tip of f.-w. and base of h.-w. between the veins. (H.S.)

LARVA UNKNOWN.

*P. DAMOCLES. 1" 1"—1" 3". ♂ bright blue, with a narrow black border; ♀ brown with three orange spots at anal angle of h.-w.; fringes white. U. s. greyish white, green at base; f.-w. with a disc. lunule and a row of very large oval black eyes; h.-w. with a white basal streak not extending quite to the hind margin, and some small scattered black spots. VI.

LARVA UNKNOWN.

*P. DAMON. 1" 1"—1" 5". ♂ pale blue, hind margins broadly brown; ♀ uniform brown, bluish at the base. Fringes white. U. s. h.-w. greyish or reddish brown in ♂, always reddish brown in ♀, with a broad white basal streak extending almost to the hind margin. VI—VIII.

Larva yellowish green, with a darker dorsal line, a similar lateral one bordered with white, and another red or yellow one beneath it. (V.G.) On *Hedysarum onobrychis* and *supinus*. V.

*P. DONZELII. 1" 1"—2". ♂ brown, basal half of all the wings blue; f.-w. with a disc. spot. ♀ brown; f.-w. with a small black disc. spot; h.-w. with four red marginal dots. Fringes white. U. s. whitish grey with

black disc. lunules, a marginal row of orange spots, a row of black eyes within it, and a row of black dots close to the fringe. H.-w. with an indistinct whitish basal streak. VI—VII.

LARVA UNKNOWN.

*P. ARGOLUS. 10'''—1" 5'''. ♂ pale blue; ♀ f.-w. blackish brown, broadly blue at the base; h.-w. pale blue, except the costa, which is broadly blackish, as is occasionally also the hind margin, which is marked with a few black dots. U. s. pale blue with numerous black dots not ocellated. IV—VIII.

Larva grey with a darker dorsal line; head and legs black. (V.G.) On the flowers of holly, buckthorn, and ivy. VI. IX—X.

*P. SEBRUS. 9'''—10'''. ♂ blue, with a narrow well defined black border; ♀ brown, base dusted with violet blue; fringes very white. U. s. f.-w. pale grey with a disc. lunule in a white ring and a row of black eyes. H.-w. with the row of eyes and several other spots within it. All the hind margins with a bluish line. V.

LARVA UNKNOWN.

*P. ALSUS. 8'''—1". Brown, with a faint bluish tint in ♂. U. s. pearly grey, f.-w. with a disc. spot and a single row of small black eyes. H.-w. greenish at base and with several dots within the central row. V—VIII.

Larva green with a red dorsal and red and yellowish lateral streaks. (V.G.) On *Astragalus cicer*. V. VII.

*P. SEMIARGUS. 1" 1'''—1" 4'''. ♂ dark purplish blue, with a moderately large black border, ♀ uniform brown. U. s. dull ash colour, green at base; f.-w. with a black disc. spot and a single row of oval black eyes. H.-w. with a similar row of round ones. V—VII.

LARVA UNKNOWN.

†P. HELENA. 10"—1". ♂ pale violet blue, border and veins blackish; fringes white. ♀ brown with a marginal orange band on h.-w. U. s. grey, greenish at the base, with black stripes and marginal eyes; an orange marginal band, nearly wanting on the f.-w. (S.) VI.

LARVA UNKNOWN.

P. CŒLESTINA. 1" 1". ♂ purplish blue, with a black border of moderate width; ♀ brown; fringes white. U. s. slate colour, with a central row of small black eyes; f.-w. with a disc. lunule; h.-w. broadly metallic green at base. VI.

LARVA UNKNOWN.

*P. CYLLARUS. 1"—1" 3". Very similar to *Iolas* above, but more shining. U. s. h.-w. powdered with brilliant copper-green, except at the hind margins. V—VII.

Larva varies between white, grey, yellow, and rosy, with red dorsal and sub-dorsal lines, and a pale lateral line. (V.G.) On *Papilionaceæ*. VI—VII.

*P. MELANOPS. 9"—1". ♂ purplish blue, with a narrow black border; ♀ brown; f.-w. blue at the base. U. s. grey, green at the base; f.-w. with a disc. lunule and a central band of five very large black eyes, increasing in size from the costa to the anal angle. H.-w. with a row of small eyes and a single eye on the costa nearer the base. IV—V.

LARVA UNKNOWN.

*P. IOLAS. 1" 2"—1" 4". ♂ purplish blue, costa of h.-w. brown; ♀ with the hind margin of f.-w. and costa of h.-w. very broadly brown. U. s. silvery grey with oval disc. spots and a central row of black eyes with white pupils; h.-w. slightly dusted with green at the base. VI—VII.

Larva greenish brown with a black dorsal line and a large lateral band paler than the ground colour. (V.G.) In the pods of *Colutea arborescens*.

*P. ALCON. 1" 4". ♂ purplish blue, hind margins with a moderately large black border; f.-w. with a disc. spot. ♀ blue, hind margins and costæ very broadly brown; f.-w. with a disc. lunule and an obscure curved row of black spots. U. s. ashy brown with the usual markings, and in addition a marginal row of eyes. All the eyes are rather small and uniform in size. Base of h.-w. very slightly bluish, with two spots within the disc. spot. VI.

LARVA UNKNOWN.

*P. DIOMEDES. 1" 3"—1" 4". Very similar to *Arion*, but the black hind margins much broader and always with a row of black spots on the h.-w. in ♀. U. s. reddish grey, the spots of average size. VII.

LARVA UNKNOWN.

*P. ARION. 1" 3"—1" 6". Purplish blue, with rather broad black hind margins; costa of h.-w. black. F.-w. with a black disc. spot, outside which is a more or less conspicuous row of oval black spots. U. s. grey, greenish at the base, with many black eyes, very variable in size, but most of which are very large. V—VII.

LARVA UNKNOWN.

*P. ARCAS. 1" 2"—1" 3". Dull brown, with a black disc. spot on f.-w. ♂ with the base broadly tinged with blue. U. s. paler, with a row of black dots running across the centre of all the wings. VII—VIII.

LARVA UNKNOWN.

FAMILY VII. HESPERIIDÆ.

Antennæ very widely separated at the base, often hooked; all the six legs fitted for walking in both sexes; body rather stout; larva cylindrical, without spines, inhabiting rolled up leaves.

A. Wings brown, with grey and white spots. 1. PYRGUS.

AA. Fore wings dull greyish brown, with darker bands.

2. NISONIADES.

AAA. Wings with tawny, fulvous, or yellowish markings.

B. Hind margin of h.w. slightly curved inwards before the anal angle. 3. PAMPHILA.

BB. Hind wings with the hind margin rounded.

4. CYCLOPIDES.

Genus 1. PYRGUS.

Palpi rather long, very hairy, and porrected; antennæ rather short, not hooked, terminated by a gradually-formed arched club. Wings rounded or dentated, brown with whitish spots; fringes spotted.

A. Wings with semi-transparent spots.

B. Ground colour dark brown. *P. Malvarum*.

BB. Ground colour obscure greenish brown. *P. Marubii*.

BBB. Ground colour pale grey. *P. Lavateræ*.

AA. Wings with no transparent spots.

C. The row of pale spots on f.-w. interrupted in the middle.

D. U. s. h.-w. greenish. *P. Tessellum*.

DD. U. s. h.-w. reddish grey. *P. Proto*.

DDD. U. s. h.-w. pale reddish. *P. Therapne*.

CC. Pale spots of f.-w. not interrupted in the middle.

E. Spots of h.-w. white.

F. Pale spots of f.-w. arranged in a nearly straight line.

- G. Spots of the central band of the u. s. h.-w. angulated and contiguous.
- H. U. s. h.-w. greenish grey.
- I. Central white band of h.-w. reaching from the costa to the inner margin. *P. Cribellum*.
- II. Central white band of h.-w. not extending to the costa. *P. Phlomidis*.
- HH. U. s. h.-w. reddish. *P. Sao*.
- GG. Spots of the central band of the u. s. h.-w. rounded and separate. *P. Orbifer*.
- FF. The fifth spot of f.-w. much nearer the hind margin than the sixth.
- J. U. s. f.-w. with a white longitudinal marginal streak between two veins. *P. Malvæ*.
- JJ. U. s. with white spots impinging on the hind margin, triangular on the f.-w., rounded on the orange h.-w., with a central black dot. *P. Sidæ*.
- JJJ. U. s. f.-w. with white longitudinal lines within veins between the white hind margin and the row of spots.
- K. Veins of u. s. h.-w. unicolorous. *P. Carthami*.
- KK. Veins of u. s. h.-w. whitish. *P. Centaureæ*.
- JJJJ. U. s. h.-w. with the hind margin slightly, if at all, paler than the ground colour; pale lines between veins wanting or inconspicuous.
- L. U. s. h.-w. greenish. *P. Cynaræ*.
- LL. U. s. h.-w. reddish. *P. Alceus*, var. *Fritillum*.
- EE. Spots of h.-w. nearly obsolete.
- M. F.-w. with basal spots. *P. Andromedæ*.
- MM. F.-w. with no basal spots.

N. Disc. spot white. *P. Cacaliæ*.

NN. Disc. spot black, between two white lunules.

O. Spots large, forming an irregular band across f.-w. outside the disc. spot, and faintly visible on h.-w. *P. Alveus*.

OO. Spots small and scattered; h.-w. wholly immaculate. *P. Serratulæ*.

*P. MALVARUM. 1" 1"—1" 4". Dark brown with a whitish curved line running from the costa of f.-w. near the tip, and two greyish bands on all the wings; the innermost of those on the f.-w. whitish. H.-w. with four similar curved lines. V—VII.

Larva ashy grey, with two paler lateral streaks, and a yellow collar marked with two black spots. (V.G.) On different species of mallow. VI. IX.

*P. MARRUBII. 1" 1". Obscure greenish brown; f.-w. with four large dull white spots varying in shape; h.-w. with a central dull white band, a white basal spot, and faint traces of a pale marginal band. IV—VIII.

Larva pale reddish or yellowish grey, dorsal stripe brownish, and a brownish lateral stripe. (R.) On *Marrubium hispanicum*. III—V. VIII—IX.

*P. LAVATERÆ. 1" 3"—1" 4". Pale grey, with a broad white band across the centre of the wings, and some small spots near the base, and outside the band of f.-w.; h.-w. with a second white marginal band. V. VII—VIII.

LARVA UNDESCRIBED.

The above species have the hind wings considerably dentated.

*P. PROTO. 1". Greenish brown; f.-w. with an incomplete central row of dull white spots; a white spot

nearly in the centre of the row outside, and three confluent ones on the costa near the tip. Faint traces of a marginal row of pale markings on all the wings. H.-w. with a distinct central band of pale spots and one basal spot. U. s. h.-w. dull reddish green with two white bands. VI—VII.

Larva yellowish grey, head with two red spots, dorsal line red. (V.G.) On *Phlomis lychnitis*. V.

*P. TESSELLUM. 1" 3". F.-w. brown with a marginal row of white spots largest at the inner margin; within this are three isolated oblong spots parallel with the costa, and two in the centre of the wing; next are two black disc. spots with a white spot within and outside them, and three oblong ones towards the inner margin. H.-w. brown, base darker, hind margin spotted with white; a large white basal spot and two rows of white spots between these. U. s. f.-w. brown, hind margin with oblong white spots; disc. spots as above; outside these is a row of white spots. H.-w. yellowish brown with a large white basal spot, and white central and marginal bands. V. VIII.

LARVA UNKNOWN.

*P. CRIBRELLUM. 1". Very close to *Tessellum* above. U. s. f.-w. with the dark markings greenish black instead of dull green; h.-w. with the pale markings pearly white rather than cream colour. V.

LARVA UNKNOWN.

P. CYNARÆ. 1" 2". Blackish brown; f.-w. with an interrupted and very irregular band of white spots; a large white disc. spot, and another white blotch on the inner margin nearer the base. H.-w. with a central band of oblong spots, and traces of a basal spot and of a row of marginal dots. U. s. f.-w. black, costa and inner margin white, and hind margin white, with only the veins black; two rows of white spots, coalescing in the

centre of the wing run from the costa. H.-w. white with two very broad reddish brown bands ceasing before reaching the inner margin; the base is also slightly marked with the same colour.

LARVA UNKNOWN.

*P. SIDÆ. 1" 1"—1" 4". Brown, fringes spotted with brown and white; f.-w. with a white disc. spot, and a small white costal dot above it; a much indented marginal band of white spots. H.-w. with two rows of white spots, the innermost paler and suffused; a white spot on the inner margin near the base. U. s. f.-w. brownish grey with many white marginal spots; h.-w. with alternate bands of white and pale orange spots; a marginal black line on all the wings. VI.

LARVA UNKNOWN.

P. CARTHAMI. 1" 2". F.-w. 'dark brown with a curved row of six white spots, an obsolete row of marginal ones, three oblong parallel ones on the costa, and a black disc. spot marked with white. H.-w. dark brown, with a row of marginal spots and an obsolete central white band. U. s. f.-w. greenish grey, the hind margin and the markings of the upper side pearly white. H.-w. pearly white with two rather indistinct greenish or reddish bands, and a basal spot of the same colour. V—VIII.

LARVA UNKNOWN.

*P. ALVEUS. 1". F.-w. brown with a black disc. spot having a white lunule on each side; the innermost forms part of a row of white spots. Between the disc. spot and hind margin is an indented row of white spots, and there are also a few whitish basal streaks. H.-w. brown with a white basal spot, and two transverse bands of suffused white spots. U. s. whitish; h.-w. with two brownish yellow bands. The white markings are sometimes yellowish. V—VIII.

LARVA UNKNOWN.

†P. SERRATULÆ. 1" 2". Brownish fuscous; f.-w. with small square white spots; h.-w. nearly immaculate, sometimes with obsolete ashy brown spots. U. s. f.-w. ashy brown with white spots in the upper portion; h.-w. greenish with white basal spots, and a central band of white spots, plainly interrupted with small inconspicuous spots between the fourth and sixth nervures. Inner margin greyish black, unspotted. Tip of the club of the antennæ ferruginous. (Wa.) VI—VII.

LARVA UNKNOWN.

P. CACALIÆ. 1" 1". Brown, base darker, fringes spotted with white; f.-w. with a much indented row of very small white dots, and two or three near the costa within this. H.-w. with two very indistinct rows of rather large spots, scarcely paler than the ground colour. U. s. f.-w. grey with some of the markings of the upper side represented; h.-w. yellowish green, the hind margin with several irregular white blotches, and a large white band running from the centre of the costa, interrupted before reaching the inner margin. Nearer the base are two white dots. VII.

LARVA UNKNOWN.

†P. ANDROMEDÆ. 1" 1"—1" 2". Brownish fuscous; f.-w. with large square white spots, h.-w. with evanescent spots. U. s. f.-w. greyish fuscous with white spots as above; h.-w. greenish with a central band of nearly continuous white spots; white basal spots varying in form; inner margin ashy grey, paler at the anal angle; tip of the club of the antennæ ferruginous. (Wa.) VI—VII.

LARVA UNKNOWN.

*P. CENTAURÆ. 11". Brown, base darker; f.-w. with two cream-coloured disc. spots; one very much angulated row of cream-coloured spots of moderate size, and a single basal spot on the inner margin; h.-w. with two

indistinct rows of pale spots. U. s. pale grey, the white markings more or less conspicuous and suffused. VI-VII.

LARVA UNKNOWN.

*P. MALVÆ. 1"—1" 1". Blackish brown, all the fringes spotted with black and white; f.-w. with many irregular white spots forming two or three interrupted bands; h.-w. with a large blotch of confluent white spots on the costa beyond the middle, but which only extends half way across the wing, and a marginal row of white dots from this blotch to the anal angle. U. s. f.-w. pale brown, the white dashes of the fringe running further into the ground colour than on the upper side; the spots of the upper side represented, but less conspicuous. H.-w. dark yellowish brown with some white basal spots; the costal blotch of the upper side, a row of marginal spots, and sometimes a large white blotch at the anal angle. V. VIII.

Larva greyish or yellowish brown, with a darker or ferruginous dorsal line and two clear yellow lateral lines shaded with reddish; head black. On *Fragaria vesca* and *Rubus Idæus*. (V.G.) IV.

*P. PHLOMIDIS. 1". F.-w. dull brownish grey, with the usual three white confluent spots on the costa near the tip, and two disc. spots, below which are two other spots; h.-w. darker with a central white band, a white disc. spot, and an ill-defined marginal line. U. s. f.-w. blackish, tip whitish, the spots of the upper side represented; h.-w. yellowish green, with the basal spot and two transverse bands very well defined.

LARVA UNKNOWN. VI—VII.

P. ORBIFER. 11"—1" 1". Dark brown, fringes white, divided by the narrowly black veins; f.-w. with two rows of white spots, the innermost very irregular and interrupted, and two white spots nearer the base towards the costa. H.-w. with a marginal row of white

spots; two or three more close together in the exact centre of the wing, and sometimes a white basal dot. U. s. h.-w. olive green with a very large pearly white spot on the costa near the base, forming part of a transverse row of smaller but similar spots; a central band of white middle-sized spots, and a marginal row of smaller ones. Inner margin broadly white, more or less mixed with pearly blue. VI.

LARVA UNKNOWN.

*P. SAO. 10"—11". Black, fringes spotted with white; a marginal row of white dots; f.-w. with an indented central band of rather large white spots, and with a rather large disc. spot; h.-w. with a very large central white band. U. s. f.-w. blackish with several rather large white spots; costa and hind margin greenish grey, the latter spotted with white. U. s. h.-w. reddish with an interrupted central row of confluent white spots; nearer the base are one or two white dots. Tip and centre of the hind margin with large whitish blotches. V—VII.

LARVA UNKNOWN.

P. THERAPNE. 10". Glossy brown; inner margin of h.-w. greenish; f.-w. with a pale yellowish disc. spot, and a central row of spots continued across the h.-w. of the same colour. H.-w. with a pale basal dot, and a marginal row of spots. U. s. f.-w. yellowish green, tip reddish with longitudinal white spots; h.-w. red with two white basal spots, a central band of large spots, and several large spots on the hind margin. IV. VII.

LARVA UNKNOWN.

The species of this genus are so closely allied, and, at the same time, so variable, that no two authors agree about which are species and which varieties. I have followed Staudinger's arrangement, but Rambur enume-

rates six or seven other species, which Staudinger sinks as varieties, principally of *P. Alvens*.

Genus 2. NISONIADES.

Antennæ short, but longer and more slender than in *Pyrgus*; the club attenuated at the tip, not hooked. Wings longer than the abdomen, not chequered; the fringes unicolorous.

*N. TAGES. 1"—1" 3". Dull brown with marginal rows of small pale dots. Two obscure greyish bands on f.-w., and one on h.-w. IV—VIII.

Larva green with two yellow lateral stripes, above each of which is a small black dot on every segment. (V.G.) On *Eryngium campestre* and *Lotus corniculatus*. V—VI. IX.

†N. MARLOYI. 1". Blackish brown; f.-w. with a marginal row of pale greyish spots bounded outside by an obscure pale line; within these are two small pale spots near the costa. H.-w. unicolorous. U.s.f.-w. with two white apical dots. (H.S.) VII.

LARVA UNKNOWN.

Genus 3. PAMPHILA.

Antennæ sometimes hooked at the tip; head and thorax very broad; abdomen as long as the hind wings. Sexes differing in colour; the males generally with an oblique velvety patch of scales on the disc of the fore wings. Hind wings slightly sinuated at the anal angle.

A. Antennæ pointed and hooked at the tip.

B. Hind wings wholly without markings. *P. Nostradamus*.

BB. Hind wings more or less varied.

C. Ground colour brown. *P. Ætna*.

CC. Ground colour fulvous.

D. U. s. h.-w. with indistinct markings. *P. Sylvanus*.

DD. U. s. h.-w. with square white spots. *P. Comma*.

AA. Antennæ not pointed or curved at the tip.

E. Fore wings with a paler curved mark beyond the middle. *P. Actæon*.

EE. Fore wings with no paler markings.

F. Inner margin of u. s. h.-w. fulvous. *P. Thaumás*.

FF. U. s. h.-w. unicolorous. *P. Lineola*.

**P. THAUMAS*. 1" 1'''—1" 3'''. Fulvous, hind margins black; f.-w. in ♂ generally with a rather broad basal streak. U. s. h.-w. greenish ash, inner margin fulvous. VI—IX.

Larva green with a darker dorsal stripe divided by a paler thread, and two yellowish white lateral streaks. Head and legs green. (V.G.) On grass. VI.

P. LINEOLA. 1" 1'''—1" 2'''. Fulvous; ♂ with a very narrow basal streak, sometimes absent; hind margins moderately broadly black. U. s. f.-w. with the basal half of the inner margin uniformly black; h.-w. unicolorous greenish ash. VII.

Larva pale yellowish green, with two yellowish white lateral stripes and a dorsal one; head reddish. (V.G.) On grass. VI.

**P. ACTÆON*. 1 1'''—1" 2'''. ♂ brown, slightly tinged with tawny; basal streak very narrow. ♀ brighter tawny with a central streak meeting the extremity of the basal one. U. s. h.-w. unicolorous greenish ash. VI—VIII.

Larva pale green with a darker dorsal line edged with a yellowish line on each side, and divided by a pale central line; two lateral yellow lines, the uppermost narrower than the other. (Zeller). On *Calamagrostis picejos*. VI.

*P. SYLVANUS. 1" 2"—1" 4". Greenish brown with fulvous markings; f.-w. with a broad black basal streak in ♂. U. s. h.-w. greenish, tinged with tawny at anal angle, with a few indistinct pale spots. V—VI. VIII.

Larva dull green with a dark dorsal line and dotted with black; beneath, on the tenth and eleventh segments, are snow-white transverse spots. (Zeller quoted by St.) On *Holcus lanatus* and other grasses. V.

*P. COMMA. 1" 2"—1" 4". Greenish brown with more extended fulvous markings than *Sylvanus*. U. s. h.-w. greenish with distinct square white spots. VIII.

Larva dull green mixed with reddish, stigmata black, collar and two spots beneath the ninth and tenth segments white; head brown. (V.G.) On *Coronilla varia* and different *Papilionaceæ*. VI—VII.

†P. ÆTNA. 1" 2"—1" 3". Brown, base greenish in ♀; a row of four orange spots across f.-w., largest and duldest in ♂; h.-w. with an orange central spot in ♀. ♂ dull brownish yellow at base. U. s. yellowish brown, inner margin black; a row of distinct orange spots across all the wings. (H.S.) VIII.

*P. NOSTRADAMUS. 1" 1". Dark brown, base smoky black; inner margin of h.-w. paler than the ground colour; a few white dots on f.-w. in ♀. U. s. pale brown, some obscure white spots towards tip of f.-w. and in ♀ at the hind margin of h.-w. VIII.

LARVA UNKNOWN.

Genus 4. CYCLOPIDES.

Antennæ not hooked at the tip; sexes similar in colour, the males with no oblique patch of scales on the fore wings, which are long and pointed; hind wings short, not emarginate; body more slender than in *Pamphila*.

A. Hind wings uniform brown. *C. Steropes*.

AA. Hind wings not uniform brown.

B. Ground colour black. *C. Paniscus*.

BB. Ground colour yellowish tawny. *C. Sylvius*.

*C. STEROPES (fig. 12, u. s.) 1" 5". Uniform brown; f.-w. with one or two yellow spots near the tip. VI—VII.

Larva greenish white, dorsal line darker, and two very pale yellowish white lateral lines. (V.G.) On grass. V—VI.

*C. PANISCUS. 1"—1" 2." Black with numerous tawny blotches and spots. V—VI.

Larva brownish black; back darker; two yellow lateral lines. Head black, collar orange. (V.G.) On *Plantago major*. IV. IX.

*C. SYLVIVS. 1" 1". Yellowish tawny with narrow brown borders; f.-w. with a marginal row of brown spots, and four isolated ones between these and the base; h.-w. with the hind margin and two lines on the centre of the wing brown. U. s. h.-w. greenish; hind margin and several basal spots tawny. V.

Larva dirty bone colour, dorsal and lateral lines pale reddish brown; spiracles black. (Freyer.) On grass? V.

APPENDIX I.

GEOGRAPHICAL DISTRIBUTION.

IN order to illustrate the Geographical Distribution of the European RHOPALOCERA, I have divided Europe into the following arbitrary divisions:—

- (1). Iceland.
- (2). Scandinavia (Norway, Sweden, and Lapland).
- (3). North Russia. The whole of Russia to the north of an imaginary line drawn across the country to the north of Poland.
- (4). South Russia. Poland, and Russia to the south of the above-mentioned line.
- (5). Turkey (including Dalmatia).
- (6). Greece and the neighbouring islands.
- (7). Italy and Sicily.
- (8). Corsica and Sardinia. These islands contain a very peculiar fauna, many interesting species and sub-species being peculiar to them, which I regret I am unable more particularly to notice.
- (9). Spain and Portugal.
- (10). France.
- (11). British Isles.
- (12). North Central. Holland, Belgium, Prussia, and Germany.
- (13). South Central. Switzerland and the Austrian Empire.

SPECIES.	Iceland.	Scandinavia.	N. Russia.	S. Russia.	Turkey.	Greece.	Italy.	Corsica.	Spain.	France.	Britain.	N. Central.	S. Central.	HABITAT.
C. Chrysotheme	N	...	...	...	...	...	...	...	...	Bd	Fields
Hecla	L	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Thisoa	M	...	...	...	...	...	...	...	...	...	Mountains
Myrmidone	N	...	...	...	...	...	...	...	P	Bd	Fields
Edusa	N	...	...	...	...	R	Bd	K	P	Ni	Fields
Heldreichi	S	...	...	...	...	...	...	...	Mountains
Aurorina	E	...	...	...	...	...	...	...	...	...	Mountains
G. Rhamni	...	Wa	...	N	...	...	...	...	R	B	K	P	Ni	Woods
Cleopatra	R	Bd	...	...	...	Woods
D. Chrysippus.	Bd	C	...	...	...	...	...	...	Unknown to me
M. Cynthia.	...	Bd	...	...	...	...	Bd	...	...	...	...	...	Bd	Mountains
Iduna	...	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Materna	...	Wa	...	N	...	...	Ni	...	...	Bd	...	Bd	VG	Woods
Artemis	...	Wa	...	N	...	...	VG	...	R	Bd	St	P	Bd	Woods
Desfontainesii	R	...	...	...	...	Bushy places
Cinxia	...	Wa	...	N	...	M	O	...	R	VG	St	P	VG	Woods
Arduinna	Bd	Bd	...	...	...	...	...	...	...	...	Grassy places
Phœbe	...	O	...	Bd	...	...	Pa	...	R	Bd	...	P	Ni	Dry woods
Didyma	F	N	...	...	M	...	R	Bd	...	P	C	Dry woods
Trivia	N	...	...	Bd	...	...	...	...	...	Bd	Unknown to me
Deione	R	Bd	...	...	...	Unknown to me
Athalia	...	Wa	...	N	...	...	VG	...	...	O	St	O	O	Woods
Dictynna	...	Wa	...	...	...	...	Ni	...	...	VG	...	P	VG	Woods
Britomartis	P	...	Unknown to me
Parthenie	F	VG	...	...	...	...	R	R	...	VG	VG	Dry mount. wds.
Asteria	Bd	Unknown to me
A. Aphirape	...	Wa	VG	N	...	...	...	...	...	M	...	Bd	O	Unknown to me
Selenis	Bd	...	...	...	...	...	...	...	...	...	Woods
Selene	...	Wa	F	N	...	...	Ni	...	...	C	K	P	Ni	Woods
Euphrosyne	...	Wa	F	N	...	...	Ni	...	...	C	K	P	Ni	Woods
Pales	...	Wa	...	F	...	...	VG	...	...	VG	...	...	Bd	Woods
Chariclea	...	Bd	...	...	...	...	...	...	...	...	...	Bd	...	Unknown to me
Polaris	...	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Freyja	VG	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Dia	F	N	...	...	Ni	...	...	C	...	P	Ni	Woods
Amathusia	E	...	...	...	...	...	VG	...	...	VG	Woods
Frigga	...	Wa	...	F	...	...	...	...	...	...	...	...	...	Unknown to me
Thore	...	Wa	...	F	...	...	...	...	...	...	...	...	Bd	Alpine meadows
Daphne	E	...	...	Ni	...	...	C	...	O	VG	Mountains
Ino	...	Wa	...	N	...	...	...	...	...	Bd	...	Bd	VG	Meadows
Hecate	F	N	...	...	...	...	R	Bd	...	Bd	VG	Fields
Lathonia	...	Wa	...	N	...	...	...	...	R	...	St	P	Ni	Woods
Eugenia	M	...	...	...	...	...	...	...	...	...	...	Mountains
Cyrene	Bd	...	...	...	...	...	Mountains
Alexandra	M	...	...	...	...	...	...	...	...	...	Wooded mntns.
Aglaia	...	Wa	...	N	...	...	Ni	...	R	C	K	P	N	Woods
Niobe	...	Wa	...	N	...	...	...	...	R	VG	...	VG	VG	Mountns. woods
Adippe	...	Wa	...	N	...	...	Bd	...	R	B	St	P	Ni	Woods
Laodice	Bd	Bd	Bd	...	...	...	...	...	...	C	C	Glades in woods
Paphia	...	Wa	F	N	...	...	Ni	...	...	C	K	P	VG	Woods
Pandora	N	O	M	...	...	R	Bd	...	...	VG	Bushy places
A. Prorsa	F	N	...	...	...	...	R	Bd	...	C	VG	Marshy woods
G. Egea	Bd	...	...	O	...	...	Bd	...	...	VG	Gardens, &c.
C-album	...	Wa	F	N	...	...	Ni	Ni	R	Ri	K	P	Ni	Gardens, &c.

SPECIES.	Iceland.	Scandinavia.	N. Russia.	S. Russia.	Turkey.	Greece.	Italy.	Corsica.	Spain.	France.	Britain.	N. Central.	S. Central.	HABITAT.
V. Polychloros	...	Wa	...	N	...	...	...	...	R	D	K	P	VG	Woods
Xanthomelas	M	VG	...	...	...	...	...	...	...	Bd	Bd	Woods
V-album	M	E	...	...	...	...	...	...	...	P	Bd	Shaded riv. bnks
Urticæ	...	Wa	F	N	...	...	...	Bd	R	D	K	P	We	Woods, &c.
Io	...	Wa	F	N	...	...	Ni	...	...	D	K	P	Ni	Woods
Antiopa	...	Wa	...	N	...	...	...	...	...	B	St	P	Ni	Woods
P. Atalanta	...	Wa	F	N	...	...	...	...	R	D	K	P	Ni	Woods
Cardui	...	Wa	F	N	...	...	...	...	R	D	K	P	Ni	Waste places
Ionia	S. unkn. to me
N. Aceris	F	O	Ni	...	...	...	...	...	...	...	Bd	Woods
Lucilla	N	C	...	Bd	...	...	...	...	...	Bd	Woods
L. Sibylla	N	...	...	...	...	R	C	St	...	Ni	Woods
Camilla	N	...	...	...	...	...	Bd	...	P	O	Woods
N. Populi	...	Wa	F	E	...	...	O	...	...	Bd	...	P	O	Woods
A. Iris	E	...	...	Ni	...	...	Bd	St	P	M	Woods
Ilia	F	N	...	...	O	...	...	Bd	...	P	M	Woods
C. Jasius	Bd	...	...	...	R	Bd	...	...	...	Unknown to me
M. Galathea	N	Bd	...	Bd	...	...	B	K	P	Bd	Woods
Lachesis	R	O	...	...	...	Mountains
Teneates	M	...	...	...	...	...	...	...	...	...	Mountains
Larissa	N	Bd	Bd	...	...	...	...	...	...	...	Unknown to me
Hylata	M	...	...	...	...	...	...	...	...	...	Mountains
Clotho	Bd	Bd	...	Bd	...	...	VG	...	...	Bd	Mountains
Psyche	VG	...	...	VG	R	Bd	...	...	M	Mountains
Pherusa	Bd	...	...	...	...	...	M	Unknown to me
Arge	M	...	...	Bd	...	...	...	...	...	M	Unknown to me
Thetis	R	M	...	...	...	Unknown to me
L. Roxelana	Bd	Bd	Bd	...	...	...	...	...	...	VG	Lanes
Clymene	Bd	Bd	...	...	...	...	...	...	...	Bd	Groves
Mæra	...	Wa	...	E	...	...	...	...	R	B	...	P	Ni	Lanes
Hiera	...	Wa	M	N	...	...	VG	...	...	...	...	...	Bd	Unknown to me
Megæra	...	Wa	...	N	Bd	...	...	Bd	R	B	K	P	Ni	Lanes
Ægeria	...	Wa	...	N	...	...	O	...	R	Bd	K	P	O	Woods
Dejanira	...	Wa	...	E	...	...	...	...	...	B	...	P	Ni	Woods
H. Proserpina	N	...	...	O	...	...	Bd	...	O	O	Rocky hills
Hermione	N	...	...	O	...	...	Bd	...	...	O	Rocky woods
Alcyone	VG	...	VG	...	R	Bd	...	...	Bd	Unknown to me
Briseis	N	...	...	...	...	R	Bd	...	VG	Ni	Rocky places
Anthe	Bd	M	...	...	...	...	...	...	...	...	Mountains
Autonoe	Bd	...	...	...	...	...	...	...	...	...	Steppes of Russ.
Semele	...	Wa	...	E	...	...	VG	Bd	R	B	K	P	Ni	Rocky places
Anthelea	M	Bd	...	...	...	...	...	...	...	Bd	Unknown to me
Pelopea	Not European
Agave	Bd	...	...	...	...	R	...	...	...	...	Rocky places
Beroe	HS	...	...	...	...	...	...	...	...	Unknown to me
Iolaus	Bd	...	M	...	...	...	Mountains
Arethusa	N	...	...	Bd	Bd	R	Bd	...	...	O	Woods
Statilinus	N	...	...	O	...	R	Bd	...	O	VG	Rocky woods
Fidia	O	...	R	Bd	...	...	...	Rocky places
Phædra	N	...	...	Ni	...	...	Bd	...	P	Ni	Woods
Cordula	E	...	...	O	...	VG	O	...	...	O	Mountains
Actæa	O	...	R	Bd	...	...	...	Rocky woods
Virbius	M	...	...	...	...	...	...	...	...	...	Unknown to me
Lycæon	N	...	...	...	...	...	R	Bd	...	P	Bd	Meadows

SPECIES.	Iceland.	Scandinavia.	N. Russia.	S. Russia.	Turkey.	Greece.	Italy.	Corsica.	Spain.	France.	Britain.	N. Central.	S. Central.	HABITAT.
H. Narica	Bd	Bd	...	...	...	...	...	...	...	...	...	Fields
Janira	Wa	M	E	...	...	VG	...	R	Bd	K	P	Ni	Fields
Janiroides	HS	...	...	...	...	Unknown to me
Nurag	G	...	...	...	...	...	Unknown to me
Ida	O	...	R	Bd	...	...	...	Rocky woods
Tithonius	O	...	R	Bd	K	P	...	Woods
Pasiphae	R	Bd	...	...	...	Wooded mntns.
Hyperanthus	Wa	...	N	...	...	...	...	...	B	K	P	Ni	Woods
T. Phryne	Bd	...	...	...	...	...	...	...	...	...	Meadows
Sunbecca	D	...	...	...	...	...	...	...	...	...	Unknown to me
C. CEdipus	E	...	...	Bd	...	...	VG	...	...	Bd	Woods
Hero	Wa	M	E	Ni	...	...	...	...	Bd	...	Bd	Ni	Open woods
Iphis	VG	M	N	...	...	...	...	...	Bd	...	O	O	Woods
Mundane	BM	...	...	...	...	...	...	...	...	...	Unrecorded
Arcanius	Wa	...	N	...	...	O	...	...	O	...	P	Ni	Woods
Leander	Bd	...	...	...	...	...	...	...	...	Bd	Grassy places
Philea	O	...	...	...	...	...	Bd	Mountains
Dorus	N	...	...	...	...	R	Bd	...	...	...	Unknown to me
Corinna	O	Bd	...	...	...	...	...	Dry places
Amaryllis	Bd	VG	...	...	...	...	...	...	...	...	...	Mountains
Pamphilus	Wa	M	N	...	...	VG	...	R	Bd	K	P	Ni	Dry places
Thyrsis	HS	...	...	...	...	...	...	...	Unknown to me
Davus	Wa	...	N	...	...	...	...	...	Bd	St	...	Bd	Vide p. 69.
Typhon	Wa	...	...	...	...	...	...	...	...	We	...	...	Vide p. 70.
C. Jutta . . .	VG	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Aello	O	...	...	...	...	...	Bd	Mountains
Tarpeia	Bd	...	...	...	...	...	...	...	...	...	Fields and hills
Norna	Wa	O	...	...	...	...	...	...	...	...	...	...	Unknown to me
Bore	Wa	...	...	...	...	...	...	...	...	...	...	...	Mountains
Taygete	VG	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Crambis	S. Unkn. to me
CEno . . .	Bd	Bd	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
E. Epiphron	Bd	St	...	O	Mountains
Melampus	O	...	...	VG	...	...	Bd	Mountains
Eriphyle	S. Unkn. to me
Arete	Bd	Mountains
Mnestra	VG	...	...	...	...	...	Bd	Mountains
Pharte	O	...	...	...	...	...	O	Mountains
Pyrtha	O	...	...	Bd	...	...	O	Mountains
Ceto	VG	...	...	VG	...	...	Bd	Mountains
CEme	O	...	...	VG	...	...	O	Mountains
Medusa	Wa	...	E	...	...	...	...	...	VG	...	Bd	Bd	Elevated woods
Pirene	O	...	...	VG	...	...	Bd	Mountains
Nerine	Bd	...	...	...	...	...	Bd	Mountains
Evias	Bd	...	...	Bd	Mountains
Melas	VG	Bd	...	...	Bd	Mountains
Alecto	O	...	...	Bd	...	...	O	Mountains
Scipio	Bd	...	...	VG	Mountains
Stygne	VG	...	...	Bd	...	...	...	Mountains
Afra	Bd	Bd	...	...	...	...	...	...	...	...	Mountains
Parmenio	Bd	...	...	...	...	...	...	...	...	Bd	Unknown to me
Manto	Wa	O	...	...	...	O	...	...	Bd	...	...	Bd	Mountains
Ocnus	M	...	...	...	...	...	...	...	...	...	Plains
Tyndarus	N	VG	...	O	...	R	Bd	...	...	Bd	Mountains

SPECIES.	Iceland.	Sandina via.	N. Russia.	S. Russia.	Turkey.	Greece.	Italy,	Corsica.	Spain.	France.	Britain.	N. Central.	S. Central.	HABITAT.
E. Gorge	O	...	...	VG	...	...	O	Mountains
Gorgone	M	...	...	...	...	...	Bd	...	...	...	Mountains
Goante	O	...	...	...	...	...	Bd	Mountains
Reichlini	HS	...	Mountains
Pronoe	M	...	...	...	...	...	Bd	...	...	Bd	Mountains
Neoridas	M	...	...	...	...	...	Bd	...	...	Bd	Mountains
Medea	N	...	...	...	...	...	Bd	St	...	VG	Lowlands
Ligea	Wa	...	N	...	...	O	...	...	VG	We	P	O	Lowlands
Euryale	VG	...	P	Bd	Mountains
Embla	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Disa	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
L. Celtis.	N	...	...	Bd	...	R	Bd	...	...	...	Woods
N. Lucina	Wa	...	...	...	...	...	...	...	B	St	P	Ni	Damp woods
T. Betulæ	We	...	N	...	...	...	...	...	B	St	P	Ni	Woods
Spini	N	...	...	O	...	R	Bd	...	P	VG	Woods
W-album	Wa	M	N	...	...	...	...	...	B	St	O	Ni	Woods
Ilicis	Wa	...	N	...	...	...	...	R	Bd	...	P	Ni	Woods
Acaciæ	N	...	...	...	...	...	Bd	...	...	Bd	Woods
Pruni	Wa	...	N	...	...	Ni	...	...	B	St	P	Ni	Woods
Ledereri	M	...	...	...	...	...	...	...	...	Mountains
Quercus	Wa	...	N	...	...	...	Ni	R	B	K	P	Ni	Woods
Rubi	Wa	...	N	...	...	...	...	R	B	K	P	Ni	Bushy places
A. Roboris	R	Bd	...	O	...	Mountains
T. Ballus	VG	...	R	Bd	...	...	...	Unknown to me
Callimachus	N	...	...	...	...	...	...	...	...	...	Low mountains
C. Virgaureæ	Wa	M	E	...	...	O	...	...	VG	We	P	Bd	Woods
Ottomanus	Bd	Bd	...	...	...	...	...	...	...	Unknown to me
Thersamon	N	...	...	Bd	...	...	...	...	...	Bd	Unknown to me
Hippothoe	O	...	N	...	...	O	...	...	Bd	St	P	O	Marshes
Eurydice	Wa	M	N	M	...	O	...	...	B	St	...	Bd	Wds & meadows
Alciphron	M	N	...	...	...	...	...	Bd	...	P	VG	Woods
Gordius	R	Bd	...	...	O	Mountains
Dorilis	N	...	...	Ni	...	...	B	...	...	Bd	Woods
Hypoxanthe	BM	...	...	...	...	...	...	...	...	...	Unrecorded
Phlæas	Wa	M	N	...	...	...	...	R	B	K	P	M	Bushy places
Helle	Wa	M	...	...	...	...	...	...	...	...	Bd	VG	Mountains
P. Bæticus	N	M	...	O	...	R	O	...	...	O	Gardens
Telicanus	M	...	O	VG	R	Bd	...	P	...	Gardens
Balkanica	HS	...	...	...	...	...	...	...	...	Unknown to me
Tiresias	N	...	...	O	Ni	...	Bd	...	VG	VG	Meadows
Fischeri	M	E	...	...	...	...	...	...	...	...	...	Stony places
Trochilus	M	...	...	...	...	...	...	...	...	Unknown to me
Ægon	M	N	...	...	...	...	R	B	K	...	Ni	Bushy places
Argus	Wa	M	N	...	...	...	...	R	Bd	...	...	Ni	Bushy places
Optilete	Wa	M	E	...	...	VG	...	...	...	...	O	Bd	Damp woods
Cyane	E	...	...	...	...	...	...	...	...	...	Mountains
Zephyrus	Bd	...	...	...	...	...	...	...	...	...	Mountains
Pylaon	E	...	...	...	...	...	...	...	...	...	Unknown to me
Davius	VG	Bd	...	...	...	...	...	...	...	...	Unknown to me
Battus	Wa	...	N	...	...	Bd	Ni	...	Bd	...	O	Bd	Woods
Hylas	R	...	...	...	...	Fields
Panope	E	...	...	...	...	...	...	...	...	...	Marshy steppes
Lysimon	R	Bd	...	...	...	Meadows
Rhymnus	Bd	...	...	...	...	...	...	...	...	...	Mountains

SPECIES.	Iceland.	Scandinavia.	N. Russia.	S. Russia.	Turkey.	Greece.	Italy.	Corsica.	Spain.	France.	Britain.	N. Central.	S. Central.	HABITAT.
P. Psylorita	BM	...	...	...	...	...	...	...	...	Unknown to me
Pheretes	Wa	VG	...	...	...	O	...	...	...	...	...	O	Mountains
Orbitulus	Wa	...	...	...	...	O	...	...	Bd	...	...	Bd	Mountains
Medon	Wa	M	E	...	...	...	...	R	...	K	P	...	Waste places
Idas	R	...	...	...	...	Unknown to me
Hyacinthus	BM	...	...	...	...	...	...	...	...	Unknown to me
Anteros	Bd	M	...	...	...	...	...	...	...	...	Mountains
Eros	N	...	...	Bd	...	...	VG	...	...	O	Mountains
Eroides	M	...	...	...	...	...	...	...	...	...	Mountains
Icarus	Wa	M	N	...	...	...	...	R	Bd	K	P	VG	Meadows
Chiron	Wa	...	E	...	...	Ni	...	R	O	...	...	O	Mountains
Amandus	Wa	O	E	...	...	VG	...	R	Bd	...	O	Bd	Mountains
Agestor	M	...	...	...	...	R	Bd	...	...	...	Unknown to me
Hesperica	R	...	...	...	...	Unknown to me
Adonis	Wa	...	N	...	...	O	...	R	Bd	K	...	Ni	Waste places
Corydon	N	...	...	...	...	R	B	K	...	Ni	Waste places
Dorylas	Wa	Ni	...	...	...	O	...	R	...	...	...	Bd	Mountains
Daphnis	N	...	...	VG	...	...	Bd	...	O	Bd	Grassy places
Admetus	VG	...	...	...	...	VG	...	...	Bd	Unknown to me
Rippertii	E	...	...	...	...	...	VG	...	...	...	Hills
Lefebvrei	Bd	...	...	...	Fields
Menalcas	Bd	...	...	...	...	...	...	...	...	Unknown to me
Hopfferi	M	...	...	...	Unknown to me
Damocles	E	M	...	...	...	...	...	...	...	...	Grassy places
Damon	N	...	...	...	...	...	VG	...	...	Bd	Mountains
Donzelii	Wa	...	E	...	...	...	...	...	VG	...	...	VG	Larch woods
Argiolus	Wa	M	N	...	...	...	Ni	R	B	K	...	...	Woods
Sebrus	E	...	...	...	Ni	...	Bd	...	...	Ni	Dry places
Alsus	Wa	...	E	...	...	...	...	R	Bd	K	P	O	Waste places
Semiargus	Wa	M	N	M	...	Ni	...	R	B	St	M	M	Meadows
Helena	S	...	...	...	...	...	...	...	Mountains
Cœlestina	E	...	...	...	...	...	...	...	...	...	Mountains
Cyllarus	Wa	...	N	...	...	O	...	R	Ni	...	P	M	Damp woods, &c
Melanops	R	Bd	...	...	...	Mountains
Iolas	VG	...	Bd	...	...	Bd	...	...	Bd	Unknown to me
Alcon	Wa	...	N	...	...	...	Ni	...	Bd	...	O	Ni	Woods
Diomedes	E	...	...	...	...	...	Bd	...	Bd	VG	Damp meadows
Arion	Wa	M	E	...	...	Ni	...	...	B	St	...	M	Busby places
Arcas	E	...	...	...	...	...	Bd	...	O	VG	Mountns. places
P. Malvarum	N	...	...	M	...	R	Bd	...	P	Ni	Gardens
Marrubii	M	...	R	Bd	...	O	O	Dry places
Lavateræ	N	...	...	M	...	R	VG	...	...	Bd	Hills
Proto	N	...	...	...	...	R	Bd	...	...	Bd	Waste places
Tessellum	Bd	...	...	...	...	...	Bd	...	...	O	Fields
Cribrellum	N	...	...	...	...	...	...	...	...	...	Fields
Cynaræ	N	...	...	...	...	...	...	...	...	...	Unknown to me
Sidæ	N	Bd	...	Bd	...	...	Bd	...	...	O	Fields
Carthami	N	...	...	...	...	R	R	...	...	M	Woods
Alvens	Wa	VG	N	...	...	O	...	R	Bd	...	...	O	Mountains
Serratulæ	Wa	...	...	...	...	...	...	R	...	...	...	...	Unknown to me
Cacaliæ	R	Mountains
Andromedæ	Wa	...	...	...	...	...	...	...	...	...	...	...	Mountains
Centaureæ	Wa	...	...	...	...	...	...	...	...	...	...	...	Unknown to me
Malvæ	Wa	M	N	...	...	...	...	R	B	K	P	...	Damp woods

SPECIES.	Iceland.	Scandinavia.	N. Russia.	S. Russia.	Turkey.	Greece.	Italy.	Corsica.	Spain.	France.	Britain.	N. Central.	S. Central.	HABITAT.
P. Phlomidis	M	...	...	...	...	...	...	...	...	Unknown to me
Orbifer	N	V G	Bd	V G	...	Bd	...	...	...	Bd	Mountn. Valleys
Sao	N	...	...	...	...	R	R	...	...	O	Dry places
Therapne	Bd	R	...	...	...	...	Unknown to me
N. Tages	Wa	M	N	...	Ni	Ni	...	R	...	K	P	Ni	Dry places
Marloyi	N	...	Bd	...	...	R	...	...	...	...	Unknown to me
P. Thaumas	Wa	...	N	...	...	...	...	R	B	K	P	M	Woods
Lineola	Wa	...	N	...	...	...	...	R	V G	...	P	Bd	Woods
Actæon	M	M	...	...	...	...	R	Bd	St	Bd	V G	Dry places
Sylvanus	Wa	M	N	...	...	...	...	R	B	K	...	Ni	Woods
Comma	Wa	M	N	...	...	...	...	R	B	K	P	Ni	Dry places
Ætna	Bd	...	...	...	...	...	...	Unknown to me
Nostradamus	Bd	...	R	R	R	...	...	...	...	Dry places
C. Steropes	M	N	...	...	...	...	...	B	...	...	O	Woods
Paniscus	M	N	...	...	O	...	...	O	St	P	Ni	Woods
Sylvius	Wa	V G	...	...	...	...	...	...	...	...	Bd	...	Woods

APPENDIX II.



SYSTEMATIC AND SYNONYMIC INDEX,

COLLATING THE NAMES HERE EMPLOYED WITH THOSE USED BY
BOISDUVAL, HERRICH SCHÄFFER, STAUDINGER, AND
OTHER AUTHORS.

THE quotations from Boisduval are generally from the "Genera et Index Methodicus;" those from Herrich Schäffer, from his "Systematische Bearbeitung der Schmetterlinge von Europa;" and those from Staudinger, from Staudinger and Wocke's "Catalog der Lepidopteren Europa's und der Angrenzenden Länder." When only one author (*e.g.*, Fabricius) is cited, it is implied that these three authors have all adopted his name. The synonymes of the families and sub-families and varieties are generally omitted as unnecessary. Species whose validity is questioned by any of the above authors are marked with an asterisk; and a small *p* is used when the name in the Index is of smaller extent than its original significance, as when a genus has been broken up, or two species confounded under one name.

- PAPILIONIDÆ*, Lh. 2
PAPILIONIDES, Bd. 2
 PAPILIO, L. 3
 1 PODALIRIUS, L. 3
 v. Feisthameliæ, D.
 2 ALEXANOR, Es. 3
 3 MACHAON, L. 4
 4 HOSPITON, Gené. 4

 THAIS, Fab. 5
 5 CERISYI, G. 5
 6 RUMINA, L. 5
 v. Medescaste, I.
 v. Honnoratii, Bd.
 7 POLYXENA, W.V., H.S., S. 6
 Hypsipyle, Fab., Bd.
 v. Cassandra, H.

 DORITIS, O. 6
 8 APOLLINA, Ht. 6

 PARNASSIUS, Lt., Bd.,
 S. 6
 Doritis, O., H.S.
 9 APOLLO, L. 7
 10 DELIUS, Es., H.S., S. 7
 Phoebus, H., Bd.
 11 NORDMANNI, N., S. 7
 Clarius, H.S. 257-8, not of
 E. nor H.S. 628-31
 12 MNEMOSYNE, L. 7

PIERIDES, Bd. 7
 APORIA, H. 8
 Pieris, Sk., Bd., H.S., S.
 13 CRATÆGI, L. 8

 PIERIS, Sk. 8
 Pieris et Anthocharis, H.S.
 14 BRASSICÆ, L. 9
 15 KRUEPERI, S. 9
 16 RAPÆ, L. 9
 v. Ergave, H.
 17 NAPI, L. 10
 v. Bryoniae, O.
 18 CALLIDICE, Es. 10
 19 DAPLIDICE, L. 10
 v. Bellidice, O.
 20 CHLORIDICE, H. 10
- ANTHOCHARIS, Bd. 11
 21 BELEMIA, Es. 11
 v. Glauce, H.
 22 BELIA, Es. 11
 v. Ausonia, H.
 v. Simplonia, Fr.
 23 TAGIS, H. 12
 v. Bellezina, Bd.
 24 CARDAMINES, L. 12
 25 GRUNERI, H.S., S. 12
 26 DAMONE, Bd., H.S., S. 12
 27 EUPHENO, L. 13

 ZEGRIS, R., Bd., S. 13
 Anthocharis, p. H.S.
 28 PYROTHOE, E. 13
 Anthocharis Pyrothoe, S.
 29 EUPHEME, Es. 13

 LEUCOPHASIA, Steph. 14
 30 SINAPIS, L. 14
 v. Diniensis, Bd.
 31* LATHYRI, H. 14

 COLIAS, Fab. 14
 32 PALÆNO, L. 15
 v. Pelidne, Bd.
 33 PHICOMONE, Es. 16
 v. Nastes, Bd.
 34 HYALE, L. 16
 35 ERATE, Es., S. 16
 Nerience, F., Bd., H.S.
 36 CHRYSOTHEME, Es.
 37 HECLA, Le. 17
 Boothii, Bd., H. S. 459-60,
 S., but not of Cs. nor
 H.S. 39-40
 38* THISOA, M., Bd., S. 17
 39 MYRMIDONE, Es. 18
 40 EDUSA, Fab. 18
 v. Helice, H.
 41 HELDREICHI, S. 18
 ? *Libanotica*, Ld.
 42 AURORINA, H.S. 19
 Tamara, N., S.
 Aurora, Bd. p.? H.S. p.?

GONEPTERYX, Lh. 19

Rhodocera, Bd., H.S., S.

43 RHAMNI, L. 19

44*CLEOPATRA, L. 19

DANAIDÆ, D.W. 20

DANAIS, Fab. 20

45 CHRYSIPPUS, L. 20

v. *Alcippus*, Fab.

NYMPHALIDÆ, Lh. 20

ARGYNNIDES, K. 21

MELITÆA, Fab. 21

46 CYNTHIA, W. V. 22

v. *Ichnea*, Bd.

47 IDUNA, Dn. 23

48 MATURNA, L. 23

49 ARTEMIS, L. 23

v. *Merope*, Pr.v. *Beckeri*, Ld.

50*DESFONTAINESII, Bd. H.S.

569-70, not 1-2, 24

Bætica, R., S.

51 CIXIA, L. 24

52 ARDUINNA, Es. 24

v. *Rhodopensis*, Fr.

53 PHOEBE, Fab. 24

v. *Ætherie*, H.

54 DIDYMA, Es. 25

55 TRIVIA, W. V. 25

56*DEIONE, H. 25

57 ATHALIA, Es. 26

v. *Parthenoides*, Kf., S.

58 DICTYNNA, Es. 26

59 BRITOMARTIS, A., S. 26

60 PARTHENIE, Bk. 27

61*ASTERIA, Fr. 27

ARGYNNIS, Fab. 27

62 APHIRAPE, H. 29

v. *Ossianus*, Ht.

63 SELENIS, E., H.S., S. 29

64 SELENE, W.V. 29

65 EUPHROSYNE, L. 30

66 PALES, W.V. 30

v. *Arsilache*, H.

67 CHARICLEA, Sc. 30

v. *Boisduvalii*, D.

68 POLARIS, B. 31

69 FREYJA, Th. 31

70 DIA, L. 31

71 AMATHUSIA, Es. 31

72 FRIGGA, Th. 32

73 THORE, H. 32

74 DAPHNE, W.V. 32

75 INO, Es. 32

76 HECATE, W.V. 33

77 LATHONIA, L. 33

78 EUGENIA, E., S. 33

79 CYRENE, Bn. 34

Elisa, G.

80*ALEXANDRA, M. 34

81 AGLAIA, L. 34

82 NIOBE, L. 35

83 ADIPPE, W.V. 35

v. *Cleodora*, Es.v. *Chlorodippe*, V.G.

84 LAODICE, Ps. 35

85 PAPHIA, L. 36

86 PANDORA, W.V. 36

Cynara, Fab.

VANESSIONES, K. 36

Genus *Vanessa*, Bd., H.S., S.

ARASCHNIA, H. 37

87 PRORSA, L. 37

v. *Levana*, L.

GRAPTA, K. 37

88 EGEEA, Cr., S. 37

L-album, Bd., H.S.*Triangulum*, Fab.

89 C-ALBUM, L. 37

VANESSA, Fab. 38

90 POLYCHLOROS, L. 38

91 XANTHOMELAS, W.V. 38

92 V-ALBUM, W.V. 39

93 URTICÆ, L. 39

v. *Ichnusa*, Bn.

94 IO, L. 39

95 ANTIOPA, L. 40

- PYRAMEIS, H. 40
 96 ATALANTA, L. 40
 97 CARDUI, L. 40
 v. *Elymi*, R.
 98 IONIA, Kn., F., S. 41
 Apatura Ammonia, H.S.

 NYMPHALIDES, Bd. p. 41
 NEPTIS, Fab. 42
 Limenitis, p. Bd., H.S., S.
 99 ACERIS, Fab. 42
 100 LUCILLA, W.V. 42

 LIMENITIS, Fab. 42
 101 SIBYLLA, L. 43
 102 CAMILLA, W.V. 43

 NYMPHALIS, Lt., Bd., 43
 Limenitis, p. H.S., S.
 103 POPULI, L. 43
 v. *Tremulæ*, Es.

 APATURIDES, Bd. 44
 APATURA, Fab. 44
 104 IRIS, L. 44
 v. *Iole*, W.V.
 105 ILIA, W.V. 44
 v. *Clytie*, H.
 v. *Metis*, Fr.

 CHARAXES, O. 44
 106 JASius, L. 44

 HIPPARCHIIDES, We. 45
 MELANAGRIA, Mg., S. 46
 Arge, Es., Bd., H.S.
 107 GALATHEA, L. 46
 108 LACHESIS, H. 47
 109 TENEATES, M. 47
 110 LARISSA, H. 47
 v. *Hertha*, H.
 111 HYLATA, M. 47
 112 CLOTHO, H. 48
 v. *Atropos*, H.
 v. *Cleanthe*, Bd.
 v. *Xenia*, Fr.
 113 PSYCHE, H. 48
 Syllius, Ht.
 114* PHERUSA, Bd., S. 49
- 115 ARGE, Sz., S. 49
 Amphitrite, H., Bd., H.S.
 116 THETIS, H., S. 49
 Ines, I., Bd., H.S.

 LASIOMMATA, We. 50
 Satyrus, p. Bd.
 Pararga, H., H.S., S.
 117 ROXELANA, Cr. 50
 118 CLYMENE, Es. 50
 119 MÆRA, L. 51
 v. *Adrasta*, H.
 120 HIERA, H. 51
 121 MEGÆRA, L. 51
 v. *Lyssa*, Bd.
 v. *Tigelius*, Bn.
 122 ÆGERIA, L. 52
 v. *Meone*, H.
 v. *Xiphia*, Fab.
 123 DEJANIRA, L. 52

 HIPPARCHIA, Fab. 52
 Satyrus, p. Bd.
 Satyrus (Bd.) et *Ephinephile*
 (H.), H.S., S.
 124 PROSERPINA, W.V., H.S.,
 S. 55
 Circe, Fab., Bd.
 125 HERMIONE, L. 55
 126* ALCYONE, W.V., H.S., S. 55
 127 BRISEIS, L. 55
 v. *Pirata*, Es.
 128 ANTHE, Bb. 56
 129 AUTONOE, Es. 56
 130 SEMELE, L. 56
 v. *Aristæus*, Bn.
 131 ANTHELEA, Bd. 57
 132 PELOPEA, Kl., H.S., S. 57
 133 AGAVE, Es., S. 57
 Hippolyte, Es., Bd., H.S.
 134 BEROE, Fr., H.S., S. 58
 135 IOLAUS, Bn. 58
 Neomiris, G., Bd.
 136 ARETHUSA, W.V., 58
 v. *Erythia*, H.
 v. *Boabdil*, R.
 137 STATILINUS, Hf., H.S., S.
 58

- Fauna*, Sz., Bd.
 v. *Allionia*, Fab.
- 138 FIDIA, L., 59
- 139 PHÆDRA, L. 59
- 140 CORDULA, Fab. 59
 v. *Bryce*, O.
- 141*ACTÆA, Es. 60
 v. *Podarce*, O.
- 142 VIRBIUS, H.S., S. 60
- 143 LYCAON, Rg., S. 60
Eudora, E.S., Bd., H.S.
- 144 NARICA, H. 61
- 145 JANIRA, L. 61
 v. *Hizpulla*, H.
- 146 JANIROIDES, H.S., S. 61
- 147*NURAG, Gi., S. 62
- 148 IDA, S., 62
- 149 TITHONIUS, L. 62
- 150 PASIPHÆ, Es. 63
- 151 HYPERANTHUS, L. 63
 v. *Arete*, Mr.
- TRIPHYSA, Z. 63
Satyrus, p. Bd.
- 152 PHRYNE, Ps. 63
Phryne Tircis, H.S. text
 v. *Dohrnii*, Z.
- 153 SUNBECCA, E., H.S., S. 64
- CÆNONYMPHA, H.,
 H.S., S. 64
Satyrus, p. Bd.
- 154 CÆDIPUS, Fab. 65
- 155 HERC, L. 65
- 156 IPHIS, W.V. 66
- 157 MANDANE, K. 66
Cænonympha — ? B.M.
- 158 ARCANIUS, L. 67
- 159 LEANDER, Es. 67
- 160 PHILEA, H. Bd., S. 67
Satyrion, S., H.S.
- 161 DORUS, Es. 68
- 162 CORINNA, H. 68
- 163 AMARYLLIS, Cr. 68
- 164 PAMPHILUS, L. 69
 v. *Lyllus*, Es.
- 165*THYRSIS, Fr., H.S., S. 69
- 166 DAVUS, L. 69

- 167*TYPHON, Hw. 70
Davus, p. Bd., H.S., S.
 v. *Isis*, Th.
- CHIONOBAS, Bd., H.S.,
 S., 70
- 168 JUTTA, H. 71
 v. *Balder*, Bd.
- 169 AELLO, Es. 71
- 170 TARPEIA, Es. 71
- 171 NORNA, Th. 71
- 172*BORE, Es. 71
- 173 TAYGETE, H., S. 72
Bootes, Bd., H.S.
- 174 CRAMBIS, Fr., S. 72
Taygete, H.S., not of H.
- 175 CENO, Bd. 72
 v. *Also*, Bd.
- EREBIA, Dn. 72
- 176 EPIPHRON, Kh. 75
 v. *Cassiope*, Fab.
- 177 MELAMPUS, Fu. 76
- 178*ERIPHYLE, Fr., S. 76
Cassiope, p. Bd.
Tristis, H.S.
- 179*ARETE, Fab. 76
- 180 MNESTRA, Es. 76
- 181*PHARTE, Es. 76
- 182 PYRRHA, W.V. 77
- 183 CETO, H. 77
- 184 CEME, Es. 77
- 185 MEDUSA, W.V. 77
 v. *Psodea*, H.
- 186 PIRENE, Es., S. 77
Stygne, O., Bd., H.S., but
 not of H.
- 187 NERINE, Fr. 78
- 188 EVIAS, Le. 78
- 189 MELAS, Ht. 78
 v. *Lefebvrei*, Bd.
- 190 ALECTO, H. 78
- 191 SCIPIO, Bd. 78
- 192 STYGNE, H. 78
Epistygne, Bd., H.S., S.
- 193 AFRA, Es. 79
- 194 PARMENIO, Bb. 79
Styrius, G.

- 195 MANTO, W.V., 79
 196*OCNUS, E., H.S., S. 79
 197 TYNDARUS, Es., S. 79
 Dromus, Fab., Bd., H.S.
 198 GORGE, Es. 80
 199*GORGONE, Bd. 80
 200 GOANTE, Bd. 80
 201*REICHLINI, H.S., S. 80
 202 PRONOE, Es., S. 80
 Arachne, Fab., Bd., H.S.
 203 NEORIDAS, Bd. 81
 204 MEDEA, W.V., S. 81
 Blandina, Fab., Bd., H.S.
 v. *Melusina*, H.S.
 205 LIGEA, L. 81
 206 EURYALE, Es. 81
 207 EMBLA, Th. 82
 208 DISA, Th. 82

LIBYTHEIDÆ, D.W., 82

- LIBYTHEA, Fab. 82
 209 CELTIS, Es. 82

ERYCINIDÆ, Lh. 83

- NEMEOBIUS, Steph. 83
 210 LUCINA, L. 83

LYCÆNIDÆ, Lh. 83

- THECLA, Fab. 84
 211 BETULÆ, L. 85
 212 SPINI, W.V. 85
 213 W-ALBUM, Kh. 85
 214 ILICIS, Es., H.S., S. 86
 Lynceus, Fab. Bd.
 v. *Æsculi*, H.
 215 ACACIÆ, Fab. 86
 216 PRUNI, L. 86
 217 LEDERERI, H.S., S. 86
 218 QUERCUS, L. 87
 219 RUBI, L. 87

AUROTIS, Dn. 87

- Thecla*, p. Bd., H.S., S.
 220 ROBORIS, Es., H.S., S. 87
 Erippus, H., Bd.

THESTOR, H. 88

- Thecla*, p. H.S.
Polyommatus, p. Bd.

- 221 BALLUS, Fab. 88
 222 CALLIMACHUS, E., S. 88
 Epiphania, H.S.

CHRYSOPHANUS, H. 88

- Polyommatus*, Bd., H.S., S.
 223 VIRGAUREÆ, L. 89
 224 OTTOMANUS, Le. 90
 225 THERSAMON, Es. 90
 226 HIPPOTHOE, L. 90
 v. *Dispor*, Hw.
 227 EURYDICE, Rg., Bd., S. 90
 Chryseis, W.V., H.S.
 v. *Eurybia*, O.
 v. *Candeus*, H.S.
 228 ALCIPHON, Rg., S. 91
 Hipponoe, Es., H.S.
 Iiere, Fab., Bd.
 229 GORDIUS, Es. 91
 230 DORILIS, Hf. 91
 Circe, W.V., H.S.
 Xanthe, Fab., Bd.
 231 HYPOXANTHE, Bd., M.S.S.,
 B.M., 91
 232 PHLÆAS, L. 92
 233 HELLE, W.V. 92
- POLYOMMATUS, Lt. 92
Lycaena, Fab., Bd., H.S., S.
 234 BÆTICUS, L. 98
 235 TELICANUS, Ht. 98
 236 BALCANICA, Fr., S., 99
 Psittacus, H.S.
 237 TIRESIAS, Rg., S., 99
 Amyntas, W.V., Bd., H.S.
 238 FISCHERI, E., H.S., S., 99
 239 TROCHILUS, 99
 240 ÆGON, W.V., 100
 v. *Bella*, H.S.
 241 ARGUS, L. 100
 242 OPTILETE, Kh. 100
 243 CYANE, E., H.S., S. 100
 244 ZEPHYRUS, Fy., 101
 245 PYLAON, F. 101
 246 BAVIUS, E. 101
 247 BATTUS, W.V., 102
 248 HYLAS, W.V., 102
 v. *Panoptes*, H.

- 249*PANOPE, E., S. 102
 250 LYSIMON, H., 102
 251 RHYMNUS, E. 103
 252 PSYLORITA, Fr., H.S., S.,
 103
 253 PHERETES, H. 103
 254 ORBITULUS, S. 103
 v. *Aquilo*, Bd.
 v. *Dardanus*, Fr.
 255 MEDON, Hf., S. 103
 Agestis, W.V., Bd., H.S.
 v. *Allons*, H.
 v. *Artaxerxes*, Fab.
 v. *Salmacis*, Steph.
 256*IDAS, R. 104
 257 HYACINTHUS, H.S., S. 104
 258 ANTEROS, Fr. 104
 259 EROS, O. 105
 260 EROIDES, Fy., H.S.? S. 105
 Boisduvalii, H.S.
 Everos, D.
 261 ICARUS, Rg. 105
 Alexis, W.V.
 262 CHIRON, Rg., S. 106
 Eumedon, Es., Bd., H.S.
 263 AMANDUS, Sc., S. 106
 Icarius, Es., Bd., H.S.
 264 AGESTOR, G., S. 106
 Escheri, H., Bd., H.S.
 265*HESPERICA, R. 106
 266 ADONIS, W.V. 107
 v. *Ceronus*, Es.
 267 CORYDON, Si. 107
 v. *Albicans*, Bd.
 268 DORYLAS, W.V. 107
 269 DAPHNIS, W.V., H.S., S.,
 107
 Meleager, Es., Bd.
 v. *Stevenii*, H.
 270 ADMETUS, Es. 108
 271 RIPPERTII, Fr. 108
 272 LEFEBVREI, G., S. 108
 Dolus, H., Bd., H.S.
 273*MENALCAS, Fr., S. 108
 Epidolus, Bd., H.S.
 274 HOPFFERI, H.S., S. 109
 275 DAMOCLES, H.S. 109
 Damone, E., S.

- 276 DAMON, W.V. 109
 277 DONZELII, Bd. 109
 278 ARGIOLUS, L. 110
 279 SEBRUS, H. 110
 280 ALSUS, W.V. 110
 v. *Lorquinii*, H.S.
 281 SEMIARGUS, Rg., S. 110
 Acis, Ht., Bd., H.S.
 v. *Bellis*, Fr.
 282 HELENA, S. 111
 283 CÆLESTINA, E., H.S., S. 111
 284 CYLLARUS, Rg. 111
 285 MELANOPS, Bd., H.S., S. 111
 286 IOLAS, O. 111
 287 ALCON, W.V. 112
 Euphemus, G.
 288 DIOMEDES, Rg., S. 112
 Euphemus, H., Bd., H.S.
 289 ARION, L. 112
 290 ARCAS, Rg., S. 112
 Erebus, Kh., Bd., H.S.

 HESPERIIDÆ, Lh. 113
 PYRGUS, H. 113
 Thymele, Steph., not of Fab.
 Syrichthus, Bd.
 Hesperia, p. H.S.
 Spilothyrus (D.) et *Syrich-*
 thus (Bd.) S.
 291 MALVARUM, L., H.S., S. 115
 Malvæ, W.V., Bd.
 292*MARRUBII, R. 115
 v. *Altheæ*, G.
 v. *Gemina*, Ld.
 293 LAVATERÆ, Es. 115
 294 PROTO, Es. 115
 295 TESSELLUM, H. 115
 296 CRIBRELLUM, E., H.S., S.,
 116
 297 CYNARÆ, R. 116
 298 SIDÆ, Es. 117
 299 CARTHAMI, H. 117
 v. *Mæschleri*, H.S.
 300 ALVEUS, H. 117
 v. *Fritillum*, H.
 v. *Cirsii*, R.
 v. *Carlina*, R.
 v. *Onopordi*, R.

- 301 SERRATULÆ, R. 118
 302 CACALIÆ, R. 118
 303 ANDROMEDÆ, Wa., S. 118
 304 CENTAUREÆ, R. 118
 305 MALVÆ, L., S. 119
 Alveolus, H., Bd., H.S.
 v. *Melotis*, D.
 306 PHLOMIDIS, H.S., S., 119
 307 ORBIFER, H. 119
 v. *Eucrate*, O.
 308 SAO, H. 120
 309 THERAPUE, R. 120

NISONIADES, H. 121
 Thanaos, Bd.
 Hesperia, p. H.S.
 Erynuis, Sk., S.

- 310 TAGES, L. 121
 v. *Cervantes*, Grl.
 311 MARLOYI, Bd., S. 121
 Sericea, Fr. H.S.

PAMPHILA, Fab. 121
 Hesperia, Fab., Bd., H.S. p.,
 S.

- 312 THAUMAS, Hg., S. 122
 Linea, W.V., Bd., H.S.
 313 LINEOLA, O. 122
 314 ACTÆON, Es. 122
 315 SYLVANUS, Es. 123
 316 COMMA, L. 123
 317 ÆTNA, Bd. 123
 318 NOSTRADAMUS, Fab. 123
 v. *Lefebvrei*, R.

CYCLOPIDES, H. 123

Steropes, Bd.
Hesperia, p. H.S.
Cyclopides (H.) et *Cartero-*
 cephalus (Ld.) S.

- 319 STEROPES, W.V., H.S., S. 124
 Aracynthus, Fab., Bd.
 320 PANISCUS, Es. 124
 321*SYLVIUS, Kh. 124

APPENDIX III.

LIST OF ABBREVIATIONS OF AUTHORS' NAMES, AND SHORT NOTICES OF WORKS ON EUROPEAN RHOPALOCERA.

THINKING short notices of such works as I have met with might be useful, I have introduced them here. Works marked F., S. or We. I have not seen, but quote the titles, &c., from the authors indicated; those marked "E. A., 18—, p —," are noticed in the "Entomologist's Annual" for that year.

A. Assmann in the "Breslauer Entomologische Zeitschrift." (S.)

B. Bellier de la Chavignerie, the editor of the Lepidopterous portion of "Le Nouveau Guide de l'Amateur d'Insectes."

A practical French handbook to the collection and preservation of all orders of insects. The first edition is noticed in E. A. 1856, p. 148, and the present in E. A. 1861, p. 151.

Bb. Bœber (S.)

Bd. Boisduval, "Species Général des Lépidoptères, Tome I., 1836." Contains a complete monograph of the *Papilionidæ* known at the time it was published. There are also a few illustrations.

Bd. "Europæorum Lepidopterorum Index Methodicus," 1829.

Bd. "Genera et Index Methodicus," 1840.

These two works are catalogues of the European Lepidoptera, with short Latin descriptions of new species, and the latter also with the genera characterised. The first extends to the end of the Noctuæ, the second also contains the Geometræ. Other works of Bd. I have not seen.

Bk. Borkhausen (S.)

BM. Catalogues of the British Museum collections.

Bn. Bonelli. Descriptions of new insects in "Memorie della R. Accademia delle Scienze di Torino, Tomo XXX." (S.)

C. "Chenu Encyclopedie d'Histoire Naturelle," two vols. of Lepidoptera (each 5s. 6d.) and Index.

The first volume contains a complete illustrated genera of Rhopalocera and Sphingina and is of great value; I cannot say so much for the rest of the work.

Cr. Cramer, "Papillons Exotiques." (S.)

Cs. Curtis. A short article in the "Appendix to Ross's "Voyage to the Arctic Regions," containing descriptions of the new insects brought home by the expedition, with one coloured plate.

D., Dup. Duponchel; *vide* G.

Dn. Dalman. "Analecta Entomologica," 1823. (S.)

D.W. Doubleday, Westwood, and Hewitson, the Genera of Diurnal Lepidoptera.

E. Eversmann. Various papers in the "Bulletin de la Société Impériale des Naturalistes de Moscou."

E. "Fauna Lepidopterologica Volgo-Uralensis," 1844.

A Latin work of about 500 pages, containing much valuable information relating to the Lepidoptera of the south-east of Russia.

Es. Esper, "Die Schmetterlinge in Abbildungen nach der Natur," 1777—1794. (S.)

F. Fischer de Waldheim "Entomographia Imperii Rossici." Vol. 5. Nymphalides, edited by F. and E. 1851.

A handsomely got-up book with plates, mostly very exact, of many interesting Russian and Siberian species.

Fab. Fabricius' various Latin works.

Fr. Freyer "Beitrage und Neuere Beitrage zur Schmetterlingskunde," 1827—1858.

Two series of Illustrations, varying in merit, of new or rare Lepidoptera and their larvæ.

Fu. Fuessly, various German works. (S.)

- Fy. Frivaldszky. (S.)
- G. Godard and Duponchel, "Histoire Naturelle des Lépidoptères de France." With plates. (S.)
- Gartner. A paper on *Colias Myrmidone* in the "Stettiner Entomologische Zeitung."
- Gené. A paper on new Sardinian insects in the Turin Memoirs. (*vide* Bn.) XXXIX. (S.)
- Germain MSS. quoted by V.G.
- Gi. Ghiliani, "Elenco delle Specie di Lepidotteri riconosciute esistenti negli Stati Sardi," 1852. (S.)
- Grl. Graslin (S.)
- H. Hubner, "Sammlung Europäischer Schmetterlinge," 1796—1835.
The standard illustrated work on the Lepidoptera of Europe.
- H. "Verzeichniss bekannter Schmetterlinge." Only quoted for the names of genera. (We.)
- Hf. Hufnagel (S.)
- Horsfield and Moore, "Catalogue of Lepidoptera in the East India Company's Museum."
- H.S. Herrich Schäffer. "Systematische Bearbeitung der Schmetterlinge von Europa."
The supplement to Hubner's above-mentioned work (*vide* H.)
Noticed in E. A. 1857, p. 177.
- Ht. Herbst und Jablonsky, "Natursystem, etc., aller bekannten Schmetterlinge," 1785—1806. (S.)
- Hw. Haworth, "Lepidoptera Brittanica." (S. & We.)
- I. Illiger, "Magazin für Insectenkunde," 1801—1805. (S.)
- K. Kirby, "Fauna Boreali Americana," also W. F. Kirby.
- Kf. Keferstein. (S.)
- Kh. Knoch, "Beiträge zur Insectengeschichte." 1781—1783. (S.)
- Kl. Klug, "Symbolæ Physicæ." 1832. (S.)
- Kn. Kindermann (S. and F.).
- L. Linnæus (S.)
- Ld. Lederer.
- Le. Lefebvre.
- Lh. Leach (We.)
- Logan MSS. quoted by St.
- Lt. Latreille (S.).

M. Ménétries, "Enumeratio Corporum Animalium in Musei. Petropolis," parts 1 and 2, with coloured plates. Also reports of various scientific journeys.

Marloy. A paper in the "Annales de la Soc. Ent. de la France," for 1838.

Mg. Meigen, "Systematische Bearbeitung der Europäischen Schmetterlinge." 1829—1832. (S.)

Mr. Muller, "Fauna Insectorum Fridrichsdalina." 1764. (S.)

N. Nor. Nordmann. A paper in the Moscow Bulletin; *vide* E.

Ni. Nowicki, "Enumeratio Lepidopterorum Haliciæ orientalis." Contains notices and outline figures of several new or rare Micro-Lepidoptera, but otherwise is of little value, being simply a local list of species.

O. Ochsenheimer und Treitschke, "Die Schmetterlinge von Europa," 10 vols.

As I have only seen the first volume of this work I cannot well pronounce an opinion on it. It is noticed in E. A. 1856, p. 164.

P. Prittwitz, a series of articles on Silesian Lepidoptera in the "Stettiner Entomologische Zeitung."

Praun, "Abbildung und Beschreibung europäischer Schmetterlinge in systematische Reihenfolge."

A German work now publishing in parts at 3s. each. The figures are tolerably good, as a general rule, judging from the 10 parts containing the butterflies, which I have seen. The text is very meagre, and a considerable number of species have been wholly omitted. The selection made is also somewhat injudicious, as several Asiatic species are included. However, it is the cheapest illustrated work on the Lepidoptera of Europe with which I am acquainted.

Pr. Prunner, "Lepidoptera Pedemontana," 1798. (S.)

Ps. Pallas, "Icones insectorum præsertim Russiæ Sibiriaque peculiarium," 1781-1782. (S.)

R. Rambur, "Catalogue Systematique des Lépidoptères de l'Andalusie."

This work contains much valuable information on the *Rhopalocera* of Spain, especially the *Hesperiidæ*. But curiously enough, the 10 beautiful plates, with the exception of a portion of the first, are devoted to the *Heterocera*, a part of the work which has not yet made its appearance.

R. "Faune Entomologique de l'Andalusie," (S.)

Rg. Rottemburg (S.)

- S. Staudinger und Wocke, "Catalog der Lepidopteren Europa's und der angrenzenden Länder," Dresden, 1861, 4s. 6d.

The latest and most complete Catalogue of European Lepidoptera yet published, on which therefore the present work is based, as far as species and varieties are concerned. In my synonymic index, I have tried to select the most useful synonyms; but should they prove insufficient, I must beg my readers to refer to this Catalogue for themselves. It is noticed in E. A., 1862, p. 158.

- Sc. Schneider, "Neuestes Magazin für die Liebhaber der Entomologie," 1791-1794. (S.)

- Si. Scopoli, "Entomologia Carniolica," 1763. (S.)

- Sk. Schrank, "Fauna Boica," 1798-1802. (S.)

- St. Stainton, "A Manual of British Butterflies and Moths."

It is hardly necessary for me to notice this valuable little work, which is in the hands of every Entomologist in England. My own is intended as a sort of companion to it, and "imitation is the sincerest flattery." It is noticed in E. A., 1857, p. 175.

- Steph. Stephens, "Illustrations of British Entomology, Insecta Haustellata." (We.)

- Sz. Sulzer, "Abgekürzte Geschichte der Insekten," 1776. (S.)

- Th. Thunberg, "Dissertationes Entomologicæ," 1784-1794. (S.)

- Treitschke; *vide* O.

- Trimen, "Rhopalocera Africæ Australis, a Descriptive Catalogue of South African Butterflies. Pt. I. Papilionidæ—Nymphalidæ," 1862.

- V.G. De Villiers and Guenée, "Tableaux synoptiques des Lépidoptères d'Europe, Tome I Diurnes" (all published), 1835, price 10s.

Although considerably out of date at the present time, this is one of the most elaborate and valuable descriptive works on the Rhopalocera of Europe with which I am acquainted, and the constant references to it throughout the present work will show what extensive use I have made of it.

- Wa. Wallengren, "Skandinaviens Dagfjärilar," 1853.

To judge from the Latin portion of this book, it appears to be a complete and well-written work of its kind. Travellers in the north of Europe would do well to carry it with them.

- Wailles, "A Catalogue of the Lepidoptera of Northumberland and Durham." Pt. I.

A local list of greater value than most of its class. Noticed in E. A., 1859, p. 169.

We. Westwood, "The Butterflies of Great Britain and their Transformations."

Contains good figures and descriptions of our British Butterflies, with a few remarks on allied exotic species, and an appendix of reputed British Butterflies. Noticed in E.A. 1855, p. 150.

W.V. "Systematisches Verzeichniss der Schmetterlinge der Wiener Gegend," 1776. (S.)

Z. Zeller.

INDEX.

THE names of families and sub-families are printed in large capitals, those of genera in small capitals, and those of varieties and synonymes in italic.

Acaciæ, 86
Aceris, 42
Acis, vide *Semiargus*
Actæa, 60
Actæon, 122
Adippe, 35
Admetus, 108
Adonis, 107
Adrasta, vide *Mæra*
Ægeria, 52
Ægon, 100
Aello, 71
Æsculi, vide *Ilicis*
Ætherie, vide *Phœbe*
Ætna, 123
Afra, 79
Agave, 57
Agestis, vide *Medon*
Agestor, 106
Aglaiæ, 34
Albicans, vide *Corydon*
Alciphron, 91
Alcippus, vide *Chrysippus*
Alcon, 112
Alcyone, 55
Alecto, 78
Alexandra, 34
Alexanor, 3
Alexis, vide *Icarus*

Allionia, vide *Statilinus*
Allous, vide *Medon*
Also, vide *Æno*
Alsus, 110
Altheæ, vide *Marrubii*
Alveolus, vide *Malvæ*
Alveus, 117
Amandus, 106
Amaryllis, 68
Amathusia, 31
Ammonia, vide *Ionia*
Amphitrite, vide *Arge*
Amyntas, vide *Tiresias*
Andromedæ, 118
Anteros, 104
Anthe, 56
Anthelea, 57
ANTHOCHARIS, 11
—— vide *PIERIS*
—— vide *ZEGRIS*
Antiopa, 40
APATURA, 44
—— vide *Ionia*
Apaturides, 44
Aphirape, 29
Apollina, 6
Apollo, 7
APORIA, 8
Aquilo, vide *Orbitulus*

- Arachne*, vide Pronoe
Aracynthus, vide Steropes
 ARASCHNIA, 37
Arcanius, 67
Arcas, 112
Arduinna, 24
Arete, 76
 — vide Hyperanthus
Arethusa, 53
Arge, 49
 — vide MELANAGRIA
Argiolus, 110
Argus, 100
 ARGYNNIDES, 21
 ARGYNNIS, 27
Arion, 112
Aristæus, vide Semele
Arsilache, vide Pales
Artaxerxes, vide Medon
Artemis, 23
Asteria, 27
Atalanta, 40
Athalia, 26
Atropos, vide Clotho
Aurora, vide Aurorina
Aurorina, 19
 AUROTIS, 87
Ausonia, vide Belia
Autonoe, 56
Bætica, vide Desfontainesii
Bæticus, 98
Balkanica, 99
Balder, vide Jutta
Ballus, 88
Battus, 102
Bavius, 101
Beckeri, vide Artemis
Belemia, 11
Belia, 11
Bella, vide Ægon
Bellezina, vide Tagis
Bellidice, vide Daplidice
Bellis, vide Semiargus
Beroe, 58
Betulæ, 85
Blandina, vide Medea
Boabdil, vide Arethusa
Boisduvalii, vide Chariclea
Boisduvalii, vide Eroides
Bootes, vide Taygete
Boothii, vide Hecla
Bore, 71
Brassicæ, 9
Briseis, 55
Britomartis, 26
Bryce, vide Cordula
Bryonia, vide Napi
Cacaliæ, 118
C-album, 37
Callidice, 10
Callimachus, 88
Camilla, 43
Candens, vide Eurydice
Cardamines, 12
Cardui, 40
Carlina, vide Alveus
Carterocephalus, vide CY-
 CLOPIDES
Carthami, 117
Cassandra, vide Polyxena
Cassiope, vide Epiphron
 — vide Eriphyle
Celtis, 82
Centaureæ, 118
Cerisyi, 5
Ceronus, vide Adonis
Cervantes, vide Tages
Ceto, 77
 CHARAXES, 44
Chariclea, 30
 CHIONOBAS, 70
Chiron, 106
Chloridice, 10
Chlorodippe, vide Adippe
Chryseis, vide Eurydice
Chrysippus, 20
 CHRYSOPHANUS, 88
Chrysotheme, 16
Cinxia, 24
Circe, vide Dorilis
 — vide Proserpina
Cirsii, vide Alveus
Clarius, vide Nordmanni
Cleanthe, vide Clotho
Cleodoxa, vide Adippe
Cleopatra, 19

Clotho, 48
 Clymene, 50
Clytie, vide *Ilia*
 Cœlestina, 111
 CÆNONYMPHA, 64
 COLIAS, 14
 Comma, 123
 Cordula, 59
 Corinna, 68
 Corydon, 107
 Crambis, 72
 Cratægi, 8
 Cribrellum, 116
 Cyane, 100
 CYCLOPIDES, 123
 Cyllarus, 111
Cynara, vide *Pandora*
 Cynaræ, 116
 CYNTHIA, 22
 Cyrene, 34
 Damocles, 109
 Damon, 109
 Damone, 12
 — vide *Damocles*
 DANAIDÆ, 20
 DANAIS, 20
 Daphne, 32
 Daphnis, 107
 Daplidice, 10
Dardanus, vide *Orbitulus*
 Davus, 69
 Deione, 25
 Dejanira, 52
 Delius, 7
 Desfontainesii, 24
 Dia, 31
 Dictynna, 26
 Didyma, 25
Diniensis, vide *Sinapis*
 Diomedes, 112
 Disa, 82
Dispar, vide *Hippothoe*
Dohrnii, vide *Phryne*
Dolus, vide *Lefebvrei*
 Donzelii, 109
 Dorilis, 91
 DORITIS, 6
 — vide *PARNASSIUS*

Dorus, 68
 Dorylas, 107
Dromus, vide *Tyndarus*
 Edusa, 18
 Egea, 37
Elisa, vide *Cyrene*
Elymi, vide *Cardui*
 Embla, 82
Epidolus, vide *Menalcas*
Epinephile, var. *HIPPARCHIA*
Epiphania, vide *Callimachus*
 Epiphron, 75
Epistygne, vide *Stygne*
 Erate, 16
 EREBIA, 72
Erebus, vide *Arcas*
Ergane, vide *Rapæ*
 Eriphyle, 76
 Eroides, 105
 Eros, 105
 ERYCINIDÆ, 83
Erynnis, vide *NISONIADES*
Erythia, vide *Arethusa*
Escheri, vide *Agestor*
Eucrate, vide *Orbifer*
Eudora, vide *Lycaon*
 Eugenia, 33
Eumedon, vide *Chiron*
 Eupheme, 13
Euphemus, vide *Alcon*
 — vide *Diomedes*
 Eupheno, 13
 Euphrosyne, 30
 Euryale, 81
Eurybia, vide *Eurydice*
 Eurydice, 90
Everos, vide *Eroides*
 Evias, 78
Evippus, vide *Roboris*
Fauna, vide *Statilinus*
Feisthamelii, vide *Podalirius*
 Fidia, 59
 Fischeri, 99
 Freyja, 31
 Frigga, 32
Fritillum, vide *Alveus*
 Galathea, 46
Gemina, vide *Marrubii*

- Glauce*, vide *Belemia*
Goante, 80
GONEPTERYX, 19
Gordius, 91
Gorge, 80
Gorgone, 80
GRAPTA, 37
Gruneri, 12
Hecate, 33
Hecla, 17
Heldreichi, 18
Helena, 111
Helice, vide *Edusa*
Helle, 92
Hermione, 55
Hero, 65
Hertha, vide *Larissa*
Hesperia, vide *CYCLOPIDES*
—— vide *NISONIADES*
—— vide *PAMPHILA*
—— vide *PYRGUS*
Hesperica, 106
HESPERIIDÆ, 113
Hiera, 51
Hiere, vide *Alciphron*
HIPPARCHIA, 52
HIPPARCHIDES, 45
Hippolyte, vide *Agave*
Hipponoe, vide *Alciphron*
Hippothoe, 90
Hispulla, vide *Janira*
Honoratii, vide *Rumina*
Hopfferi, 109
Hospiton, 4
Hyacinthus, 104
Hyale, 16
Hylas, 102
Hylata, 47
Hyperanthus, 63
Hypoxanthe, 91
Hypsipyle, vide *Polyxena*
Icarius, vide *Amandus*
Icarus, 105
Ichnea, vide *Cynthia*
Ichnusa, vide *Urticæ*
Ida, 62
Idas, 104
Iduna, 23
Ilia, 44
Ilicis, 86
Ines, vide *Thetis*
Ino, 32
Io, 39
Iolas, 111
Iolaus, 58
Iole, vide *Iris*
Ionia, 41
Iphis, 66
Iris, 44
Isis, vide *Typhon*
Janira, 61
Janiroides, 61
Jasius, 44
Jutta, 71
Krueperi, 9
Lachesis, 47
L-album, vide *Egea*
Laodice, 35
Larissa, 47
LASIOMMATA, 50
Lathonia, 33
Lathyri, 14
Lavateræ, 115
Leander, 67
Ledereri, 86
Lefebvrei, 106
—— vide *Melas*
—— vide *Nostradamus*
LEUCOPHASIA, 14
Levana, vide *Prorsa*
Libanotica, vide *Heldreichi*
LIBYTHEA, 82
LIBYTHEIDÆ, 82
Ligea, 81
LIMENITIS, 42
—— vide *NEPTIS*
—— vide *NYMPHALIS*
Linea, vide *Thaumas*
Lineola, 122
Lorquini, vide *Alsus*
Lucilla, 42
Lucina, 83
Lycæna, vide *POLYOMMATUS*
LYCÆNIDÆ, 83
Lycaon, 60
Lyllus, vide *Pamphilus*

Lynceus, vide *Ilicis*
Lysimon, 102
Lyssa, vide *Megæra*
Machaon, 4
Mæra, 51
Malvæ, 119
 — vide *Malvarum*
Malvarum, 115
Mandane, 66
Manto, 79
Marloyi, 121
Marrubii, 115
Materna, 23
Medea, 81
Medesicaste, vide *Rumina*
Medon, 103
Medusa, 77
Megæra, 51
MELANAGRIA, 46
Melampus, 76
Melanops, 111
Melas, 78
Meleager, vide *Daphnis*
MELITÆA, 21
Melotis, vide *Malvæ*
Melusina, vide *Medea*
Menalcas, 106
Meone, vide *Ægeria*
Merope, vide *Artemis*
Metis, vide *Ilia*
Mnemosyne, 7
Mnestra, 76
Mæschleri, vide *Carthami*
Myrmidone, 18
Napi, 10
Narica, 61
Nastes, vide *Phicomone*
NEMEOBIUS, 83
Neomiris, vide *Iolaus*
Neoridas, 81
NEPTIS, 42
Nerienne, vide *Erate*
Nerine, 78
Niobe, 35
NISONIADES, 121
Nordmanni, 7
Norna, 71
Nostradamus, 123

Nurag, 62
NYMPHALIDÆ, 20
NYMPHALIDES, 41
NYMPHALIS, 43
Ocnus, 79
Œdipus, 65
Œme, 77
Œno, 72
Onopordi, vide *Alveus*
Optilete, 100
Orbifer, 119
Orbitulus, 103
Ossianus, vide *Aphirape*
Ottomanus, 90
Palæno, 15
Pales, 30
PAMPHILA, 121
Pamphilus, 69
Pandora, 36
Paniscus, 124
Panope, 102
Panoptes, vide *Hylas*
Paphia, 36
PAPILIO, 3
PAPILIONIDÆ, 2
PAPILIONIDES, 2
Pararga, vide *LASIOMMATA*
Parmenio, 79
PARNASSIUS, 6
Parthenie, 27
Parthenoides, vide *Athalia*
Pasiphae, 63
Pelidne, vide *Palæno*
Pelopea, 57
Phædra, 59
Pharte, 76
Pheretes, 103
Pherusa, 49
Phicomone, 16
Philea, 67
Phlæas, 92
Phlomidis, 119
Phœbe, 24
Phæbus, vide *Delius*
Phryne, 63
PIERIDES, 7
PIERIS, 8
 — vide *APORIA*

- Pirata*, vide *Briseis*
Pirene, 77
Podalirius, 3
Podarce, vide *Actæa*
Polaris, 31
Polychloros, 38
POLYOMMATUS, 92
—— vide *CHRY SOPHANUS*
—— vide *THESTOR*
Polyxena, 6
Populi, 43
Pronoe, 80
Prorsa, 37
Proserpina, 55
Proto, 115
Pruni, 86
Psittacus, vide *Balkanica*
Psodea, vide *Medusa*
Psyche, 48
Psylorita, 103
Pylaon, 101
PYRAMEIS, 40
PYRGUS, 113
Pyrothoe, 13
Pyrrha, 77
Quercus, 87
Rapæ, 9
Reichlini, 80
Rhamni, 19
Rhodocera, vide *GONEPTERYX*
Rhodopensis, vide *Arduinna*
Rhymnus, 103
Rippertii, 103
Roboris, 87
Roxelana, 50
Rubi, 87
Rumina, 5
Salmacis, vide *Medon*
Sao, 120
Satyrion, vide *Philea*
Satyrus, vide *CÆNONYMPHA*
—— vide *HIPPARCHIA*
—— vide *LASIONMATA*
—— vide *TRIPHYSA*
Scipio, 78
Sebrus, 110
Selene, 29
Selenis, 29
Semele, 56
Semiargus, 110
Sericea, vide *Marloyi*
Serratulæ, 118
Sibylla, 43
Sidæ, 117
Simplonia, vide *Belia*
Sinapis, 14
Spilothyrus, vide *PYRGUS*
Spini, 85
Statilinus, 58
Steropes, 124
—— vide *CYCLOPIDES*
Stevenii, vide *Daphnis*
Stygne, 78
—— vide *Pirene*
Styrius, vide *Parmenio*
Sunbecca, 64
Syllius, vide *Psyche*
Sylvanus, 123
Sylvius, 124
SYRICHTHUS, vide *Pyrgus*
Tages, 121
Tagis, 12
Tarpeia, 71
Taygete, 72
—— vide *Crambis*
Telicanus, 98
Teneates, 47
Tessellum, 116
THAIS, 5
Thanaos, vide *NISONIADES*
Thaumas, 122
THECLA, 84
—— vide *AUROTIS*
—— vide *THESTOR*
Therapne, 120
Thersamon, 90
THESTOR, 88
Thetis, 49
Thisoa, 17
Thore, 32
Thyrsis, 69
Tigelius, vide *Megæra*
Tircis, vide *Phryne*
Tiresias, 99
Tithonius, 62
Triangulum, vide *Egea*

TRIPHYSA, 63
Tristis, vide Eriphyle
Trivia, 25
Trochilus, 99
Tyndarus, 79
Typhon, 70
Urticæ, 39
V-album, 39
VANESSA, 38
—— vide VANESSIDES

VANESSIDES, 36
Virbius, 60
Virgaureæ, 89
W-album, 85
Xanthe, vide Dorilis
Xanthomelas, 38
Xenia, vide Clotho
Xiphia, vide Ægeria
ZEGRIS, 13
Zephyrus, 101

ADDITIONS AND CORRECTIONS.

- P. 3, l. 14 from bottom, for "hind margin" read "inner margin ;"
and make the same correction in the first part of the bottom line.
- P. 5, l. 7 from bottom, for "wings" read "wing."
- P. 6, l. 7 from bottom, for "are" read "is."
- P. 10. The larva of *Pieris Callidice* feeds on \Alpine *Cruciferæ*.
- P. 12, l. 6 from bottom, for "disc-spot" read "disc. spot."
- P. 18, l. 17 from bottom, for "always" read "usually."
- P. 18, l. 4 from bottom, for "gold colour" read "orange."
- P. 19, l. 7 from top, erase the † before *C. Aurorina*.
- P. 24, l. 4 from top, substitute * for † before *M. Desfontainesii*.
- P. 26, after l. 8 from top, add "On *Linaria* (R.)"
- P. 29, l. 14 from bottom, for "it" read "this species."
- P. 33, last line but one, add "(F.)"
- P. 43, l. 11 from bottom, for "on" read "across."
- P. 44, l. 12 from top, for "*Beroe*" read "*Iole*."
- P. 53, l. 7 from top, for "Eyes black" read "Eyes blue."
- P. 57. *H. Pelopea* is an Armenian species.
- P. 63, l. 13 from bottom, for "pupil" read "pupils."
- P. 77, l. 13 from top, insert a comma after the word "tint."
- P. 91, l. 10 from top, erase the first semicolon.
- P. 92, l. 15 from bottom, for "9'" read "9'''."
- P. 94, l. 2 from top, for "P. Hoppferi" read "P. Hopfferi."
- P. 95, l. 8 from top, for "all above the wings" read "all the wings
above."
- P. 99, l. 8 from top, add "VII—VIII."
- P. 99, l. 5 from bottom, add "VII—VIII."
- P. 103, l. 2 from top, add "VII."
- P. 105, l. 2 from top, add "V. VII."
- P. 105, l. 12 from bottom, add "VII."

LIST OF SUBSCRIBERS.

	No. of Copies.
Adams, H. G., Rochester, Kent	1
Allis, T. H., York	1
Asiatic Society, Bengal	1
Barraud, A. B., 1, St. John's Hill, Battersea Rise	1
Barron, C., Museum, R. N. Hospital, Haslar	1
Birchall, E., 1, India Buildings, Liverpool	1
Birks, J., York	1
Brown, E., Burton-on-Trent	1
———, J., Burtonbury, near Cirencester	1
———, J. R., Scaleby Lodge, Camden Road, N.	1
Chaumette, A. U. de la, Glyn Cottages, Park Village East	1
Cribb, C. J., 1, Newton Terrace, Westbourne Grove	2
Crotch, G. R., St. John's College, Cambridge	1
Dale, J. C., Glan Wootton, Sherborne, Dorset	1
Dunning, J. W., 1, Field Court, Gray's Inn	1
Evans, H., Darley Abbey, near Derby	1
Fletcher, J. E., Sidbury, Worcester	1
Fryer, C., 75, Park Street, Greenhays, Manchester	1
Gleave, E., 11, Old Hall Street, Liverpool	1
Hardy, J., 43, Radnor Street, Hulme, Manchester	1
Hay, A. J., Uckfield, Sussex	1
Hewitson, W. C., Oatlands, Walton-on-Thames	2
Hind, J. R., 22, Grove Road, St. John's Wood	6
Hopkins, Miss, 63, Hamilton Square, Birkenhead	1
Horton, Rev. E., Lower Wick, Worcester	1
Jardine, C. R., 76, Wood Street, Cheapside	1
John, E., Llantripant, Glamorganshire	1
Kenderdine, J., Abercrombie Place, Stretford Road, Manchester	1

SUBSCRIBERS—*continued.*

	No. of Copies.
Kirby, C. F., Horsham, Sussex	1
——, W., Hanger Lane, Stamford Hill	1
Knaggs, Dr. H. G., 3, Jeffreys Terrace, Kentish Town	2
Lea, J. W., The Grange, Shepperton Green, Chertsey, Surrey	1
Lewcock, G., 16, Portugal Street, Lincoln's Inn	1
Lighton, Rev. Sir C. R., Bart., Ellastone, Ashborne, Derbyshire.	1
Lonsdale, H., 7, Cambridge Road, Lower Road, Islington	1
Lowe, Dr. W. H., Balgreen, Murrayfield, Edinburgh	1
Lowndes, Mrs., Langdale House, Oxford	1
Marshall, Rev. T. A., Cheltenham College	1
Matthews, G. F., "The Warrior," Portsmouth	1
Merrin, J., 1, Caroline Villas, Gloucester	1
More, A. G., Vectis Lodge, Bembridge, Isle of Wight	1
Museum, Leicester	1
Neill, A. C. B., 15, St. James's Square, S.W.	1
Norman, G., Hull	1
Sharp, D., 13, Lansdown Road, St. John's Wood	1
Sidebotham, J., Manchester	1
Slight, L., Horsham, Sussex	4
——, Mrs., Horsham	6
Stainton, H. T., Mountsfield, Lewisham	2
Stevens, F. W., 1, Windsor Terrace, Brighton	2
Stone, S., Stonygate, Leicester	1
Trimen, R., Colonial Office, Cape Town, Cape of Good Hope	1
Walker, F., The Avenue, Church End, Finchley, N.	1
Wallace, A. R., 5, Westbourne Grove Terrace, Bayswater, W.	1
Ward, C., Halifax	2
Wilkinson, G. H., 8, Richmond Buildings, Chapel Street, Liver- pool	1
Williams, J. H., Leicester	1
Wilson, A., 14, Young Street, Edinburgh	1
Winter, W., Bressingham, Diss, Norfolk	1
Wood, T. W., 99, Stanhope Street, Hampstead Road, N.W.	1

